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LECTURES.

I. DECIDED IMPROVEMENT IN A CASE OF LOCOMOTOR ATAXIA FOLLOWING THE USE OF THE DOUBLE CHLORID OF GOLD AND SODIUM.

II. ENTERIC FEVER IN CHILDREN.

III. DIGITALIS IN MITRAL DISEASE OF THE HEART.

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I.

THE first case I bring to your attention is that of a man who was in the clinic in the fall of '97, and has thus been under observation for about one and one-half years. He is a sailor of thirty-three, with no important family history. Ten or twelve years ago he was taken with shooting pains in the thighs and also girdle pains. These continued up to the time he first came under notice, though treated several times for rheumatism. He then had an awkward gait, staggered in the dark, had lost control of his bladder, sexual power was absent, as were also the knee jerks. The diagnosis of locomotor ataxia was made, though the symptoms had not begun until four or five years after a specific infection.

As to the treatment, rest was advised and the double chlorid of gold and sodium was given, one-twentieth of a grain three times a day. This treatment has been faithfully carried out by the patient during the time since he was here first. I bring him to-day to speak of his present condition. He still has occasional shooting pains, but he walks better and with more confidence. He has had control of the bladder for the past six months. In short, there is a marked improvement of the case in every respect. The treatment shall be continued.

Now, this brings up the question as to the value of the long use of alteratives. They are of value in nervous diseases and in syphilis, and the point

is whether the treatment in question has brought about the result noticed in this case. Now and then there are seen statements in journals that cases of tabes have been cured, but there is among the profession a rather general belief that some error of diagnosis or other element of doubt is connected with such cases. The general view is that the disease is a truly progressive one, and that periods of relief are more in the nature of periods of halting in the onward course of the disease than of any real element of cure. Dr. Weir Mitchell has made the striking statement that the course of the disease is like a passing down a long flight of steps with an occasional landing, these landings corresponding to temporary halts of the disease, which then goes still further downward. This makes periods of temporary improvement, or apparent improvement, only rests in the course. But this case presents a really somewhat different condition from the one generally accepted. There is here not only an arrest of the disease, but a certain improvement. This is seen by comparing his former condition with that of to-day. His sensations, his gait, certain functions, etc., are certainly gaining. The man feels better and is encouraged, another evidence of his general condition. On the whole, I think it is quite worth while to try treatment of this kind, especially with the drug mentioned, particularly in early cases of the disease. The necessity of long use should be impressed upon the patient.

II.

This case is one of a negro boy of fourteen, and I speak of a point or two peculiar to enteric fever in children. The attack began with a chill and the various phenomena attending the beginning of fever. The end of the febrile movement practically came on the twelfth day of the attack, and was as sudden almost as the onset. The patient is now hungry, which is a symptom showing that the attack has really reached the stage of defervescence.

We have here a well-marked case of abortive typhoid fever. This so-called type is not simply one in which the symptoms are mild; but the sudden and abrupt fall, as here noticed, is characteristic of these cases. The onset is as sudden, and almost invariably with a chill, or with decided chilliness, at least. Then comes the short course, followed by the almost critical defervescence. Enteric fever in children is very apt to take this course.

A second case which I bring before you illustrates a point or two in regard to the disease. First is the palmar and plantar discoloration, to which a great deal of diagnostic importance is given by some practitioners. But the main point in the case is a notable departure from the ordinary symptomatology of enteric fever in the complete absence of headache during the entire attack. The patient is now convalescent, and there is no doubt of the genuineness of the attack. It lasted twenty-one days, with a

temperature of 103° to 104°; the Widal reaction was positive, and Ehrlich's test was also made, with positive result. But the statement is clear that headache, one of the almost invariably common of the symptoms, was not present at any time during the beginning or course of the attack.

III.

I bring before you a man whom you saw one week ago, to show the progress of the case. He is very much better in every way at this time than he was when we discussed his case first. This change I ascribe, in a great degree, to the use of digitalis. Of course, this bettered condition must not all be ascribed to the drug. The patient being in the hospital, with the rest and diet there obtained, has undoubtedly received benefit from it. But over and above what might be expected from this change, there has been a decided improvement in the case.

The patient is a man of thirty-eight, who has been a hard worker in a rolling-mill. He suffered from an attack of rheumatic fever at the age of seventeen, and from typhoid pneumonia at twenty-five. His present trouble is palpitation and dizziness and attacks of coughing when he stoops over. There is some tortuosity of the arteries of the face, the cardiac impulse being diffuse. Auscultation discloses the fact that there is mitral stenosis and regurgitation.

During the past week the man has been taking ten drops of the tincture of digitalis three times a day, with the marked improvement spoken of. We have here an illustration of the salutary effect of digitalis in cases of mitral stenosis. Many physicians fear to give this drug in these cases where the left ventricle is dilated and hypertrophied, on account of the ventricle being jeopardized by a lengthened rest under these circumstances. But I see no real reason for this view. If there were aortic regurgitation, for instance, then we might have the ventricle over-distended by prolonging the period of rest. In mitral stenosis, however, we have not this danger. This chamber is not so important in this condition as is the auricle. And a prolonged period of rest in the ventricle gives the auricle a longer time to empty itself, which means that the ventricle has a greater amount of blood to force out when it contracts. This tends to increase the pressure in the arteries and to lower it on the venous side, which is the result to be desired. The increment of danger added to the ventricle in these cases is so small that it should not be the cause of losing the good effect obtained by the slowing of the heart. In double mitral disease, then, or in mitral stenosis, we think that we are justifiable in giving digitalis in moderate doses, or, in severe cases, in increased doses.

This man will be put on seven drops, three times a day, when he goes home. I should say that, in addition to the digitalis, he has been getting ten grains of potassium iodid and five drops of Fowler's solution three times a day.

ORIGINAL PAPERS.

A NOTE ON CASES OF PHTHISIS WITH PECULIAR CARDIAC PHYSICAL SIGNS.

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UNDER this heading, two cases of great interest, recently reported in *The Lancet,* by Dr. Hale White, on November 19th (Vol. II., p. 1323), and by Mr. W. Southwick Willmore, on Dec. 10, 1898 (Vol. II., p. 1548), had until now escaped my notice.

The physical signs noted were those of great displacement of the heart to the right; yet, at both autopsies the heart was found to be normal and *not* displaced. Both observers seem to accept the inference that the displacement which they had diagnosed must have been apparent only—the cardiac sounds being conveyed by consolidated tissue—though they are at a loss to account for the impulse, which in one case was felt, and in the other was seen, as well as felt, in the right chest; and the conclusion arrived at is that "we must not assume that when the heart's impulse is seen and felt far on to the right side of the chest, the organ is necessarily dragged or pushed over or altered in size."

As any interpretation of the kind suggested might tend to shake that trust in our clinical methods of diagnosis which it is desirable that we should uphold, it may not even now be too late for this reference to the cases and for an attempt to rid them of their mysterious character, and to reconcile statements which were probably only in appearance contradictory. The clinical observations described are, to my mind, conclusive evidence of the existence during life of a considerable displacement of the heart to the right in both cases; but it is conceivable that this displacement could not be readily demonstrated by the ordinary post-mortem examination.

Cases of the sort described occur from time to time among the large number of those where fibroid excavating disease of the right lung tends to displace the heart more or less. When at the same time the left lung and the heart are fixed by adhesions, the right side of the thorax falls in. If the chest should not fall in, this must be due either to a considerable emphysematous distension of the right middle and lower lobes, or, failing this,

to the encroachment of the heart and of the left lung into the right chest. It is therefore clear that the cardiac displacements which are considerable and *horizontal* belong more specially to a group of cases in which the thorax remains symmetrical, whilst the right lower lobes are not only free from distension, but are often themselves the seat of destructive lesions such as those reported in one of the two cases. Precisely similar cases have come under my own notice.

In 1891, closely adjoining beds were occupied by two patients of mine with destructive lesions in the right lung, in whom the heart was much displaced, the cardiac dullness and impulse occupying in the right chest the position which normally belongs to them in the left. One of these patients, suffering from extensive bronchiectasis of the right lung, in whom Mr. Bennett had resected the right ninth rib, at my request, but had failed to obtain any discharge of pus, was exhibited at the Medical Society of London (cf. *Med. Soc. Trans.*, Vol. XIV., Feb. 16, 1891), under the heading of "Dexiocardia"—a term properly restricted to the exceedingly rare cases in which the heart alone is congenitally transposed to the right, the other viscera not being transposed. Both patients died, and were examined after death. In the first case (P. M. and Case Book, 1891, No. 64), I happened to be prevented from witnessing the beginning of the autopsy, and I was met on my way to the post-mortem room by a report that, whilst the right lung was extensively excavated, the relations of the heart were absolutely normal — a report which, not entertaining any doubt as to the reality of the displacement during life, I received with surprise and not without some reservation as to its retrospective significance. In our P.-M. and Case Book may be seen facing each other two equally trustworthy and accurate records—one describing the heart as it lay in its normal position, the other setting forth the clinical evidences of great displacement of the heart into the right chest. I never ceased to believe that the heart was really displaced before the chest was laid open, and that the displacement might have been demonstrated had the pericardium been opened from the abdomen before opening the chest. The second autopsy, that of the case of bronchiectasis (P.-M. and Case Book, 1892, No. 64), showed the cardiac displacement without any difficulty, thanks to the powerful adhesions, which retained the heart in the position it had occupied during life, and confirmed me in the view which I had taken of the first. Both cases were, practically speaking, identical in their clinical signs, and the pulmonary lesions were closely analogous, viz., considerable destruction of tissue and fibrosis, involving the posterior part of the upper lobe and extending into the inferior lobe almost to the base.

The leading difference was that in one case the right pleuro-pericardial adhesions were continuous with the retracted fibrous tissue of the lung, in the other they were not. If this source of fallacy be borne in mind by the pathologist, he may so conduct the operation as to demonstrate the actual condition. But even should the heart have been allowed to slide back unobserved into the left chest, owing to the admission of air into the pleuræ, it may not be impossible to reconstruct the true pathologic anatomy of the thoracic contents. Thus, in the cases reported by Dr. Hale White and by Dr. W. Southwick Willmore, both of which, as is essential for the production of the fallacy in question, were free from collapse of the right thoracic wall, a considerable proportion of the total capacity of the right half of the thorax, corresponding to the extensive destruction of lung tissue, had to be accounted for. This surplus of space we must assume to have been filled by the heart, since it could not have been occupied by the right lung, owing to the pneumonic condition of the lower lobes in one of the cases and to their diseased and airless condition in the other. I would therefore suggest for both these instances the same explanation which I had adopted at the autopsy on my own, viz., that when the sternum and costal cartilages were removed, the heart must have dropped backward by its own weight, and to the left, owing to the partial subsidence of the overstretched left lung. The heart would then have been seen in apparently natural lateral contact with the right lung; but it might have been demonstrable by reapplying the sternum that the damaged lower right lobes, practically incapable of expanding, could not have completely tenanted the vacated right parasternal region.

Taking, then, the view that these were all instances of mobile hearts, held in the right chest by atmospheric pressure, owing to extensive destruction of the right lung without compensating falling in of the chest wall, it may, perhaps, be suggested to clinicians that skiagraphy might place their diagnosis of displacements of the heart beyond any chance of skepticism, and to pathologists that they might, in investigating cases of this kind, modify their method of section in some suitable manner likely to afford a view of the heart before there had been any possibility of its relations having been disturbed.

Intragastric Nippers. Turck, of Chicago, has devised a small instrument by means of which small pieces of the gastric mucous membrane can be removed for microscopic examination. It consists of pincers, which can be protruded through the end of a stomach tube and closed upon a fragment of tissue.

TYPHLITIS—A MEDICAL STUDY.

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It is necessary to go back in the history of didactic medicine barely ten years to find diseases of that portion of the alimentary tube occupying the southwest portion of the abdomen, classified as typhlitis, perityphlitis and paratyphlitis. By the first was meant a catarrhal inflammation of the colon practically limited to its blind head. By the second was meant a local peritonitis, though the danger of its becoming general was well understood. Unfortunately, the septic and often directly perforative nature of the peritonitis was not known. By paratyphlitis was meant inflammation of interstitial tissue resulting from typhlitis. Practically, paratyphlitis meant an abscess. The appendix was not entirely ignored in this consideration, but, unfortunately, it was not thought to participate in the trouble except in proportion of its size. It is necessary only to repeat the stock quotation, "sausage-shaped tumor," to remind the readers of this paper of the diagnosis of typhlitis, of the narcotic treatment so often employed, and of the anxious watching for the breaking up of the fecal mass, like ice in the spring, or for the less favorable but still hopeful indications that an abscess was forming which could be incised and drained, or for the omen of death, the development of a general peritonitis. Indeed, it is probably true that the great majority of cases of "idiopathic" peritonitis occurring in men and in women, apart from the extension of pelvic inflammation, or of other easily assignable causes, are to be charged to the account of the appendix.

In these days, our attention has been so long concentrated on the appendix, that we have almost forgotten the older nomenclature, while there has been so much surgical discussion of the subject that one scarcely dares hint that a medical disease of the alimentary tract below the iliocecal valve exists, if we exclude dysentery or a colitis so impartial as not to affect the head of the colon especially.

Perhaps it would be well to digress sufficiently to state that the writer not only believes in surgical assistance, but has made it a rule to summon counsel and to urge operation in all but the mildest inflammations of the appendix. Nevertheless, this paper represents the standpoint of the medical clinician. Almost every part of the body, like every normal member of society, has its usefulness. When disease or crime prevents the normal function of such a member, cure or reformation and restoration to function, is the ideal. When the offence against the welfare of the body or of society is particularly malignant, or when the offender shows a disposition to repeat the offence, restoration of function becomes hopeless, and the offending

member must be gotten rid of. Of life imprisonment and death, the latter is safer, since no escape is possible, and it is cheaper. Sentiment and, perhaps, religious doctrine, favor imprisonment. Occasionally, the most carefully pronounced verdict proves to have been an error, and imprisonment affords an opportunity for restitution that the death penalty would have removed. Very similar reasons make it necessary to choose between an expectant treatment while part of the body is being enveloped in fibrous tissue, or recourse to the capital operation of the surgeon. In the case of a calcareous nodule in a once tubercular lung, only the most rampant surgeon, enjoying the novelty of an X-ray apparatus, would choose the more radical alternative. In the majority of septic processes, we wisely call for the services of the surgeon as executioner.

There is at present awaiting the electric chair a man who was found guilty and sentenced, on circumstantial evidence, very largely on account of the unanimous belief that he was a perfectly useless member of society. The same prejudice has existed in the case of the appendix. Beyond the vulgar joke of the undergraduate, only one function has been assigned to the appendix, namely, the lubrication of the fecal mass. It has usually been considered a survival of a retrograde evolutionary process, and, even in the ostrich, in which it seems to be a digestive cavity of some importance, its exact function has never been demonstrated. Whether the appendix has a function or not that can easily be shown by our present superficial physiologic methods, we should hesitate to sacrifice any part of the body, and it must be conceded that the amputation of the appendix threatens the integrity of the dome of the cecum. Moreover, unless we operate on healthy persons, the surgeon must amputate through inflamed tissues, in which bacteria are proliferating and which are liable to rupture from any accidental straining, during or after the operation. Thus, the amputation of the appendix must always be regarded, even more truly than most of the surgeon's work, as the choice of the less of two evils.

In two cases of inflammation involving the right tube or ovary seen during the past summer, the responsibility of advising for or against operation rested with the writer. Save for a difference of half an inch in location, they presented precisely the same indications for operation as if the appendix had been involved. One of the cases, in fact, owing to the rigidity of the abdominal muscles, was thought to be scolecitis, both by the writer and by a competent surgeon. The next morning, however, the distinction could be made quite readily. Temperature, pulse and blood were identical in both these cases with what would be considered positive indications for operation in the case of the appendix. As a matter of safety, the writer advised operation, though not as urgently as if the appendix had been involved. In both, medical treatment was adhered to, and a good recovery ensued. Why this distinction between two adjacent peritoneum-covered organs? Simply because a proscolex is more apt to rupture than a pyo-

salpinx. Why can we not learn to distinguish, in the case of the appendix, the cases in which free internal drainage exists and those in which rupture, by burrowing of pus or gangrene, is liable to occur? In spite of the almost universal denunciation of anyone who expresses the opinion that such a discrimination ought to be made, the writer hopes that increased experience may enable us, even within a few years, to separate cases adapted to medical treatment from those in which operation is necessary. At present we cannot do this. The writer has elsewhere referred to two cases, seen by two surgeons and himself, and operated on in immediate succession. In both the signs were practically the same, and the indications certainly seemed identical to us all. In one case operation barely averted a rupture, in the other a dissection of the appendix showed that it had a broad lumen, that its mucous membrane was normal at the tip, and that the ulceration extended down into the zone of amputation at the junction with the cecum. At the time, and at the present also, it was good policy to subject both cases to operation, but it is not good policy to hold that such an undiscriminating course is to be the best attainment of the future. The experience of gynecologists, in several conditions in which it was formerly thought that the only alternative was operation or death, teaches us differently.

It would be a dangerous sophistry to attempt to prove the medical side of such a controversy by quoting the results of exceptional cases in which patients who ought to have died have recovered after obstinately refusing the best advice of the surgeon. On the other hand, neither all reports nor all specimens used by surgeons as arguments are as convincing as they should be, and the specimens, particularly, have sometimes borne out the impression that operations have been performed for very trivial affections of the appendix, while the essential trouble was with the cecum.

The existence of colitis is well established and not disputed. The existence of typhlitis, that is, of a localized colitis, was considered equally well established a few years ago, but now it is implicitly claimed that no such process exists, and that the whole trouble with the bowel of this region is centralized in the appendix. Let us first examine the subject *a priori*. The cecum and ascending portion of the colon form a rather immovable and nearly upright stand-pipe, into which the nearly liquid contents of the ilium are poured, and from which quite consistent feces pass, on account of the abstraction of water. Both because of the relative immobility, the length of the perpendicular column and the size of the tube, there is no part of the alimentary canal through which the passage is more difficult, excepting the various sphincters. In an article on iron in the *Therapeutic Gazette*, attention has been called to some German researches that show that most of the waste iron is eliminated through the colon; it is highly probable that other waste products are also extruded at this place. The bacterial flora of the intestine is known to be particularly rich and particularly prone to virulence in the colon. In fact, the bacillus coli communis is almost always the

germ that does mischief in the body, excepting those which are distinctly foreign. The stomach is protected from its contents by an antiseptic juice, the small intestine by an abundant, protective, alkaline secretion, and by the fact that irritating and putrescible fragments rarely get between the valvulæ, but are shouldered onward rapidly. In the cecum, not only is the absorptive current greater than the secretory, but the wall of the bowel is smooth. Thus, the ingestion of improper food, or other cause of increase of bacterial activity, such as intestinal torpor, traumatism, or even "taking cold," is much more apt to produce inflammation of the cecum than of any other part of the intestine. Unfortunately, an essential catarrh of this region is always attended with the threat of bacterial colonization. So long as the process remains merely catarrhal, the appendix probably co-operates only as the tonsil or uvula would in a catarrhal pharyngitis. Like the tonsil, but to a greater degree, the appendix affords a nidus for bacteria; its resistance is less than that of more active parts of the body, it often has a congenitally deficient blood supply, and it is liable to deflections or calculus plugging—rarely plugging with foreign bodies—that prevents the outflow of septic products.

Some writers have already pointed out that what used to be called intestinal colic was probably identical with what is now classed as "appendicitis." The very vivid word-picture that Prof. H. C. Wood used to portray to demonstrate the need of clearing out the bowels before colic had developed into peritonitis, undoubtedly points to the same relation. Not to mention cases of temporary "colic" of the intestine, which run their course in a night or in a day or two, the following instance may be cited to illustrate the medical treatment of what, at first consideration, seemed to be a case of scolecitis demanding surgical treatment:

W., a young professional man, first consulted the writer in the spring of 1897 on account of dyspepsia. The stomach was large and the greater curvature was somewhat low. There was no ptosis nor suspicion of organic obstruction at the pylorus. At the time, no trouble was found with the appendix. Some time later, he had a severe nocturnal attack of diarrhea and vomiting, for which he was treated medically by a surgeon. A good recovery ensued, except that there was some debility and the bowels inclined to be constipated, with occasional attacks of diarrhea. There was slight discomfort, rather than pain, in the right iliac region. Palpation later in the year revealed a slightly enlarged though not very tender appendix having nearly a north and south direction. The patient was advised to submit to operation, but he hesitated on account of certain engagements. With the idea of keeping the bowel as aseptic as possible, and with the faint hope of securing absorption of exudate, powders of salacetol and iodol were administered. Considerable subjective improvement was reported, but the opportunity was not furnished of making a careful examination. Some months later, a recurrence of symptoms led to a repetition of this course of treat-

ment, and, after the subsidence of the symptoms, a careful palpation was made with the patient in the warm bath. Although the relaxation thus secured was ideal, the stomach being palpable, the appendix could scarcely be felt at all, and certainly presented no evident abnormality. For about six months the patient has been in perfect health.

On Sept. 8, 1898, Mrs. D., aged twenty-seven, complained of irritability of the bladder and of slight fever; the bowels were constipated and there was backache. The indican test was present in the urine, but there was no other qualitative abnormality. The next day, however, both albumin and albumose were present, as well as the heaviest coloration with urorosein (verified by Dr. J. Bergen Ogden, of the Harvard Medical School) that the writer has ever seen. There were microscopic evidences of cystitis which cleared up in a day or two, leaving a fairly typic clinical picture of typhoid. The Ehrlich test in the tube gave a color reaction indistinguishable (by the writer) from that of typhoid. As it is commonly stated that the tint is that given by carbolic urine, the writer has formed the habit of making a contrast between suspected urine and the same with carbolic acid added. In this case not the slightest difference of color could be detected. Unfortunately, the dish tests were not employed. The serum test was tried at the Board of Health laboratory, twice, without result. Although Dr. Bissell reported that he would not exclude typhoid, the writer would consider the diagnosis very doubtful. The patient defervesced and became convalescent in nine days. This fact might seem contrary to the diagnosis of typhoid, but as the treatment was antiseptic and absorptive (a modification of Bouchard's method) and as this method usually leads to very rapid recovery, say within three weeks for a moderately severe case of typic typhoid, this point may be considered negative. The absence of leucocytosis and of malarial parasites led to a rather positive diagnosis of typhoid before the report of the serum test was known. Some spots that were considered fairly typic were also noted. For our present purposes, the question as to whether this fever was typhoid, or not, is not of importance. The patient remained well till November 22d, when the temperature again rose. The urine presented evidence of subacute nephritis of tubular type—albumin and a few granular epithelial casts by centrifuge. Indican was also present, the bowels had not moved for three days, and there was a cecal tumor. The appendix was not palpable, nor was there definitely localized tenderness. The blood again showed absence of leucocytes, and, on this account, though the temperature was 103.7 and the pulse 141, operation was not considered necessary. The bowels were freely moved with calomel and injections; no food was given for twenty-four hours, then only milk; water was ordered in large amounts, and salacetol and charcoal were given every three hours. In two days the temperature and pulse had declined below the danger point —if there is any such thing—and the local indications in the region of the cecum had disappeared. Indican had also disappeared from the urine,

except for the normal trace. By November 27th the patient was practically well. Whatever the nature of the first attack, the second was undoubtedly a typhlitis, in the old-fashioned sense.

The writer has seen several instances of intoxication from food, which illustrate the fact that there is a gradation from slight intestinal fermentation, through typic botulismus to a genuine inflammation of the bowel, especially of the cecum, and even to a scolecitis demanding operation. In fact, the writer's experience with the latter class of cases leads to the opinion that, whatever associated causes there may be, the essential cause of scolecitis is the development of a heightened virulence of the bacterium coli commune by various factors favoring putrefaction in the bowel.

Mrs. W., seen in consultation with Dr. C. E. Congdon, had eaten bologna sausage several days previously. Five of the family had had diarrhea and other comparatively mild signs of poisoning, but this patient had remained in a state of profound depression, the heart being very weak, though free from murmurs. Free purgation having been secured, there was no cecal tumor, but there was tenderness over the entire colon, and the passages had contained much mucus. In another case, following upon a hearty meal chiefly of canned lobster, the patient had been inclined to constipation for several days, so that a cecal dam had been formed, and here there was both localized tenderness and tumor. The appendix, after moving the bowels, could be felt while the patient was in the hot bath, and it was somewhat tender, but the absence of high fever and pulse and of leucocytosis indicated that whatever scolecitis existed was merely part of the typhlitis. Mucus shreds were passed for several days, particularly after thorough rectal enemata, calling attention to what ought to be self-evident, that while a fecal tumor is indicative of typhlitis, and while the fecal mass is a determining cause of typhlitis, it is not the disease, and the typhlitis exists just as truly after the bowels have moved as before, though the conditions are now more favorable for relief. Let us assume a slight variation in the clinical history. Suppose that the patient, instead of admitting constipation, insists that the bowels have been moving with perfect regularity—as is often literally true, in spite of the gradual accumulation of scybalous masses in the colon and of a large amount of fecal matter in the cecum—and suppose that, instead of being able to incriminate some article of diet, some food has been taken which has been on the point of putrefying, but without giving warning by taste or smell, there would then be a typic illustration of a rather mild type of "appendicitis," for which the surgeon operates early, in which he, naturally enough, finds the tissues favorable for amputation, and in which the patient almost always makes a speedy recovery. Contrasting these cases with those in which the appendix is really diseased, in which operation is urgently demanded, but in which the chances for successful amputation and ultimate recovery are not so good, is it any wonder that the surgeon clamors for early diagnosis, for the privilege of operating on the

very cases that do not need his services, and that he is tempted to refuse operation at the time and in the case when surgery is most needed, because of the necessarily bad prognosis? No surgeon would think of using the same argument with regard to the amputation of a leg. In fact, the present outlook is that, with the exception of gangrene and malignant disease, the amputation of the future will be restricted to cases that a few years ago were considered beyond even the hope of this operation. Of course, it must be admitted that the crippling after the amputation of an appendix is not conspicuous, that the operation in itself has a low mortality, that the scar is not very disfiguring, and that the liability to hernia, though deserving consideration, is not great, but the general rule must be respected that no part of the body shall be removed unless its presence is a menace to other parts.

The problem that confronts the physician to-day is, How can the differential diagnosis be made between what is essentially septic or destructive scolecitis and what is essentially merely a slight concomitant of a typhlitis? Pathologically, no sharp line can be drawn, as bacteria are always present, and as the vulnerability of the appendix and its penetrability by bacteria or by a necrotic process are unknown factors in any particular case. Clinically, however, we must not be satisfied till we can group these cases into three categories: those which are, for all practical purposes, catarrhal typhlitis and which require medical treatment; those which are plainly septic and which demand operation immediately, if possible; those which are doubtful and which should be operated upon as a matter of life-insurance. A history of coprostasis, especially of insufficient passages with retention of part of the fecal mass, favors the diagnosis of typhlitis, as does any obvious increase of irritation of this part of the bowel. On the other hand, the fact that retained or especially poisonous intestinal contents favor the development of a typhlitis, does not insure the absence of a genuine septic scolecitis, though the latter is more apt to develop from more gradual and less conspicuous causes of the same kind. Indicanuria, likewise, occurs in both cases. If promptly relieved by clearing the intestine, it points to a removal of the cause. Cecal tumor indicates typhlitis, but the typhlitis persists after its passage from the head of the colon, and typhlitis does not, of itself, warrant the exclusion of a marked scolecitis, any more than the diagnosis of gastric catarrh allows us to exclude cancer of the pylorus. Pain, tenderness and muscular rigidity point to rather serious involvement of the appendix, and the special indications of peritonitis must be borne in mind. But considerable griping, diffused or wandering pain, may attend the passage of an irritating mass through the bowel, and the sudden cessation of pain or the absence of pain when other signs point to severe inflammation, is suggestive of tissue necrosis or vital depression. In perhaps the majority of cases, the appendix may be palpated, or else it can be positively made out that it is not enlarged. In the hot bath it is possible

to palpate most normal appendices, and the physician who is unaccustomed to this method should make allowance, just as if he were to use a magnifying power greater than usual. It is an unfavorable sign if there is so much board-like rigidity of the muscles of the right side of the abdomen that careful palpation is impossible. But as in one of the cases cited, just this condition may cover up a tubal or ovarian inflammation which has a better chance for recovery without operation than a similarly diseased appendix. With a fecal tumor, and in the absence of muscular rigidity, including the ability to lie comfortably with the right leg outstretched, the probability is in favor of typhlitis and against scolecitis. Temperature has been so thoroughly discussed that everyone is familiar with the subject and with the numerous exceptions which render a high fever compatible with a moderately severe condition and a low temperature with a very serious lesion. As in the case of puerperal fever, it has been announced that a high pulse is more serious than a high temperature. It should be recognized as a sign of sepsis in general that a low temperature and rapid, thready pulse, usually means that the system is thoroughly poisoned, whether the source of sepsis be in the pelvis, the uterus, the appendix, or anywhere else. On the other hand, there are plenty of other conditions that may increase the pulse rate without increasing the danger, or which may inhibit it without making the prognosis good. Regarding pulse, respiration, temperature, pain, etc., the diagnostician should be on the lookout, not so much for arbitrary peculiarities of one or the other, but for inconsistencies in their joint testimony. Leucocytosis is a sign of the greatest value, but it, too, must be used without any idea of pathognomonic infallibility. If, for instance, at the beginning of a disturbance in the region of the cecum, the leucocytes are normal, the omen is favorable. If, on the other hand, there is evidence of great prostration, a normal number of leucocytes means not that the body is not assailed with septic enemies, but that there is no reserve to be called forth against them. In short, the diagnosis should be made on the clinical picture as a whole rather than on any one feature. For the present, we must be exceedingly conservative in regard to denying our patients radical treatment, but, with future experience, we may reasonably hope to know, not only when to call the surgeon and when to rely on medical treatment, but to dictate the terms on which the surgeon shall act.

It will be noted that the writer has practically ignored the older terms, perityphlitis and paratyphlitis. The corresponding conditions certainly exist, but only because there has been some flaw in the diagnosis and treatment. The practical side of perityphlitis is septic poisoning, or the formation of adhesions. The practical side of paratyphlitis is an abscess. Operation should anticipate these occurrences. Theoretically, at least, this statement involves both a medical and a surgical criticism. The physician should not allow the case to pass beyond the point at which these complications may be prevented. The surgeon should remember that amputation of the

appendix, "under favorable local circumstances," is not treatment, but prophylaxis. It should be remembered that operation as a means of treatment involves, necessarily, the removal of a diseased appendix. Thus the plan of waiting for an abscess to form can be justified only by the practical conditions of a particular case, and the plan of either operating very early or very late is really a relegation of the treatment to medical means, for, at either extreme, the surgeon can claim to have acted only as a prophylactic. Only special circumstances, too, can justify the plan of waiting for the development of a clean-cut abscess, for while demarcation is taking place, the patient may be dying of septic poisoning, as in a case of the writer's, in which one surgeon advised immediate operation and another delay. In this case, the writer took the false position that the surgeons should decide the time of operating. Unless there is great disparity in experience of medical attendant and of surgeon, the latter should be called, not to say whether operation is advisable or not, nor to set a time for operation, but to carry out the plan of the physician. When it comes to the evacuation of a paratyphlitic abscess, opinions differ as to the advisability of removing the appendix. It is highly probable that any perforation must have been located in the appendix, not in the cecum; hence, if operation must be done, it is advisable to remove the appendix and thus to prevent a second crime against the safety of the body. Of course, it may not be best to amputate in a pool of pus, but, in such cases, the appendix should be removed before the wound is finally allowed to heal — unless very special contraindications exist.

CHRONIC PLUMBISM FROM DRINKING-WATER.[1]

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(Concluded.)

Lead Poisoning from Croton Water.

Cases 58-61 inclusive.—The following four cases have occurred in the persons of three physicians and one medical student, the student having boarded with one of the physicians; the rest lived apart. In one of these the blue line on the gums was entirely absent, in another it was indistinct, while in the other two they were distinctly visible. They all suffered from colic, constipation, pain and numbness in the limbs, loss of power, etc. These cases are exceedingly interesting for the singular fact that they have occurred in professional men, practitioners, who could not ascribe their own symptoms to the true cause, and, therefore, could not assign the proper treatment for themselves. Moreover,

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[1] A portion of a thesis entitled: "The Quantity of Lead in Drinking Water that May Prove Injurious to Man, and Improvements on the Separation of Lead from Urine by Electrolysis."

one of the men could not have been persuaded that he was suffering from lead poisoning, although the blue line was perfectly distinct on his gums; he therefore adopted the use of the water again and very soon had a return of the original symptoms. After this he has learned better and entirely abandoned the use of the water, and since then he is perfectly healthy. Further interest in these cases is furnished by the fact that professional men of high standing have been in attendance, such as Drs. Metcalf, Van Buren, Mott and others, none of whom even thought of looking into the patients' mouths and examining their gums. They allowed the disease to take its course, in one case or two, for nearly two years, until the patients were reduced to almost invalids, when the true nature of the disease was finally discovered. These patients, like many others who suffer from lead poisoning, when they have left their homes for some short time, and gone into the country, have returned perfectly healthy, but in a week or two afterwards, from the use of the deleterious water, the symptoms have again returned. After entirely abandoning the use of the water (Croton) they have returned to normal health. More particulars of these cases are furnished by Dr. Geo. H. Kingsbury.[2]

Case 62.—This case occurred in New York City about the year 1871. The poisoning was traced to the use of Croton water, drawn through the hot-water pipes (lead) after standing in them all night. This water was only used in preparing the morning meals.[3]

Lead Poisoning from Cochituate Water.

The following cases (Nos. 63-69) have occurred in Boston, in different parts of the city, and were traced to the drinking-water supplied from Lake Cochituate. In each case the houses were supplied with lead pipes. The specimens for examination were taken after the water had been allowed to run from two to five minutes.

Cases 63 and 64.—Out of a family of three, two, the father and son, were affected.[4] They had severe and frequent colic, anemia, debility, etc. Their urine was found to contain a considerable amount of lead. This family lived on Bennett street. Their drinking water was examined by Dr. E. M. Greene, as well as by Prof. E. S. Wood, both of whom found nearly one grain of lead to the gallon.

Cases 65, 66 and 67.—A mother and two daughters have been affected with cramps in their muscles, particularly in the calves, numbness in their fingers and arms. The oldest daughter had severe attacks of colic, constipation, etc. The urine of the mother and youngest daughter was examined and was found to contain much lead. This family lived on Hancock street; their drinking-water was examined and was also found to contain lead.[5]

Cases 68 and 69.—Another family of a mother and two daughters, the latter two only being affected. They had frequent colic, anemia, constipation, and a blue line on the gums. They lived on Ash street. Their drinking-water was found to contain a considerable amount of lead.[6]

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[2] *N. Y. Jour. of Med.*, May, 1851.

[3] Report of State Board of Health of Mass., 1871, 41.

[4] *Boston Med. and Surg. Jour.*, Nov., 1889.

[5] *Ibid.*

[6] *Ibid.*

Miscellaneous Cases.

Case 70.—Dr. Treadwell, of Salem, was suffering from the effects of the water he drank, which was contaminated with lead. The amount of lead in the water was quite large.[7]

Cases 71 and 72.—Two members of a family of seven were made seriously ill by the use of the drinking-water, containing only, at times, a mere trace of lead—a quantity so infinitely small as not to have the least effect upon the health of the others.[8]

Case 73.—Mary Ann D——, aged fifty-seven, residing at Huxly-heath, Kent. She had a severe attack of colic, lost the power of both hands shortly afterwards, and felt very weak. There was a well-marked blue line on the gums[9].

Case 75.—J. S., a cook in the kitchen of the Souterrain railroad station. Lead pipes were in use for the supply of water to this kitchen. The patient presented well-marked symptoms of chronic lead poisoning, *i.e.*, colic, blue line on the gums and icterus.[10]

Case 76.—The following case presents as the symptoms, colic, arthralgia and paralysis. Jaundice also was an early symptom; it occurred when the patient suffered from arthralgic and neuralgic pains. The paralysis occurred in the abdominal muscles, so that the patient could make no effort to expel the contents of his bowels. This case occurred in the person of a distinguished scholar and divine, Rev. Dr. Lamson, of Dedham, Mass. Dr. Stimson, a distinguished physician in Dedham, was in charge of the case, and he informs us that in 1836 water was brought to the village from a spring upwards of half a mile distant, through lead pipes, and distributed from them, through small service pipes of the same material, to most of the houses of the place. Rev. Dr. Lamson was the first person who became diseased from drinking the water. His case was one of the most interesting that occurred, was very insidious, and for a long time baffled the skill of other physicians besides Dr. Stimson. The cause of his severe illness was finally detected by accident. The attention of the physician was attracted, by the patient's wife, to the sweetish taste of their water. She brought in a pitcherful that had stood over night, and the physician observed on its surface a scum of leaden color, and that it had a decidedly sweetish taste. Dr. Stimson then sent some of the water to Prof. Webster, of Cambridge, for analysis. He found the water decidedly impregnated with lead. A quantity of the water was afterwards sent to Dr. Hayes for analysis, and with the same result.[11]

Case 77.—A colored female domestic, in the house of Dr. Lamson,[12] became diseased, and presented symptoms similar to his, but of less severity. She used the same water for eighteen months before she was taken sick. Her symptoms were arthralgic and neuralgic pains about the trunk and extremities, impaired appetite, loss of flesh, a peculiarly anxious and distressed countenance, and constipation. After she left she soon began to mend, and in a few weeks regained her usual health.

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[7] Dr. J. R. Nichols, *Boston Med. and Surg. Jour.*, Sept., 1860.

[8] *Ibid.*

[9] London *Lancet*, Jan. 21, 1860.

[10] Schmidt's Jarbucher, 1869, 279.

[11] For further particulars, vide *Trans. Amer. Med. Assoc.*, Vol. V., 187.

[12] *Ibid.*

Case 78.—Miss Mayhew, aged fourteen. The symptoms she presented were those of arthralgia and paralysis, besides minor symptoms. The pain and emaciation were most extreme; the physiognomy peculiarly marked. Lead in the drinking-water was found to have been the cause. Recovery followed the discontinuation of the use of the water.[13]

Case 79.—Lead paralysis with encephalopathy.[14] J. Guild, aged fifty-four, a resident of Dedham, Mass., engaged in mercantile pursuits, of rather feeble constitution. Early in March, 1848, he began to feel ill, felt tired, walked feebly, the pulse was feeble, appetite failing and flesh declining, symptoms to which the physician (Dr. Stimson) could not ascribe a cause. A few days later strabismus occurred, one eye turned toward the nose and he could not roll it outward; the external muscle of the eye was paralyzed. Later he took a journey to the Sulphur Springs in New York, but stayed away only a short time. Soon after his return he complained of numbness in his fingers, increasing rapidly to a marked degree, so that he could not button his clothes; soon after this paralysis of the extensor muscles of the arm set in. The countenance began to assume the expression peculiar to those who suffer from lead disease. Dr. Stimson now began to suspect lead as the cause of all the trouble. On investigation he found that the water the patient drank was derived from a well through lead pipes. Two bottles of the water, one from the pump, the other from the well outside of the leaden pipe, were sent to Dr. Hayes, a distinguished chemist in Boston, for analysis. Lead was found in both bottles. The pipe had been in the well about five or six years, and no one else in the family suffered from the use of the water. Notwithstanding the appropriate treatment his condition grew worse. The paralysis increased in the extensor muscles of both upper extremities; this was so severe that he could neither dress nor feed himself. Soon afterwards one of the lower limbs became affected, and he could not walk without assistance. The debility, emaciation and tremor increased; the complexion, a pale dirty white, and the physiognomy peculiarly marked. His spirits became greatly depressed, bowels constipated, but readily moved by medicines, pulse feeble. He continued with little alteration till early in October, when encephalopathy supervened; he became delirious during the night, talked incoherently; countenance wild and staring. This condition lasted ten or twelve days; at times would talk rationally, and answer questions correctly, then wander and be quite insane. After the affection of the brain terminated his general appearance was much as it had been previously, only more debilitated.

He continued from this time gradually to sink, and became very much emaciated before his death, which took place Jan. 2, 1849.

Case 80.—Dr. Stimson himself, at a subsequent period, became affected with a severe attack of arthralgia in his lower extremities, from using water drawn from a well through lead pipes. After removing the cause the disease subsided.[15]

Case 81.—Dr. Stimson's wife was affected, from the same cause, with paralysis in the lower extremities, which prevented her from walking; she could not rise from her chair without taking hold of something to pull herself up. After removing the cause she gradually recovered the use of her limbs.[16]

[13] *Trans. Amer. Med. Assoc.*, Vol. V., p. 193.

[14] *Ibid.*, p. 195.

[15] *Trans. Amer. Med. Assoc.*, 1852, p. 197.

[16] *Ibid.*

Case 82.—George Clark,[17] commenced to use water transmitted through lead pipes in September, 1850. He was taken with colica pictonum on April 3, 1851, and after a severe illness of three weeks convalescence commenced. Lancinating pain in the bowels and delirium were very common. He was very restless and manifested great concern for his affairs. Under treatment the symptoms abated. In the following September he had another attack, and died under the care of a homeopathic physician.

Case 83.—Mr. Thackray, aged sixty-three. His upper extremities completely paralyzed and his lower extremities partially so. He could not raise himself from the chair nor walk without assistance. His voice was altered, the bowels constipated. The drinking-water was examined and found to contain lead.[18]

Case 84.—Mrs. Thackray,[19] wife of the above patient, suffered from a long period of illness, and had, about twelve months previous to her death, become similarly paralytic. The servants in the same house also suffered from colic.

Case 85.—A man, aged forty. Had pains in the limbs and chest, constipation, some dyspeptic symptoms and a blue line on the gums. The water he used for drinking purposes was found to contain lead. He was ill for a very long period, but completely recovered after leaving off the use of the water.[20]

The following, including Cases 86-93, is reported by Dr. J. T. Garrison, of Swedesboro, N. J.[21] In the autumn of 1847 Mr. C. laid a train of one-inch lead pipe from his residence to a spring about a mile distant, for the purpose of conveying the water from it to his house and barns. When the spring was very low, as sometimes happened in warm weather, the pipes were but partially filled by the current, room being thus left for the entrance of air. No other water was used by anyone in the family. During the month of May, 1847, several members of the family began to complain of feeling uneasiness in the abdomen, with pains over the body generally, accompanied by constipation in some, and by tenesmus and bloody stools in others.

Case 86.—Mr. C. was especially affected, and became gradually worse, suffering with violent colic and unrelenting constipation. The pain, which was located near the umbilicus, was most excruciating, it never left him, and seldom even remitted decidedly. There was a strong retraction of the integuments of the abdomen toward the spine, and a hard, knotty feeling of the muscles in various places over its surface. The pulse became rapid, the skin hot, his countenance anxious, the tongue furred, and his gums presented a well-marked blue line. The stomach was also disordered, and nausea and vomiting were common. After removing the cause, and the administration of purgatives, he gradually began to recover, and on the tenth day was decidedly convalescing.

Cases 87-93 inclusive.—Mrs. C. and six others of the same family have also suffered in a similar manner, though not so severely, and, on examination, their gums were found to be distinctly marked with a blue line along their edges. By

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17 *Trans. Amer. Med. Assoc.*, 1852, p. 197.

18 J. B. Harrison, On Contamination of Water by Lead, London, 1852, p. 73.

19 *Ibid.*

20 Harrison, On Contamination, etc., p. 74.

21 *Trans. Amer. Med. Assoc.*, Vol. V.

suspending the use of the water, with some slight medication, they were soon made quite well.

Cases 94, 95.—Mr. and Mrs. G., aged fifty-six and fifty-four years respectively. Both were well-defined cases of arthralgia, accompanied by slight paralysis of the muscles of the extremities. Numbness of the hands and arms, weak and painful joints, particularly the knee-joint, troublesome dreams, great depression and general restlessness were among other symptoms. The cause of this illness was traced to their drinking-water, which was drawn through lead pipes. An analysis revealed a trace of lead in solution. After discontinuing the use of the water they gradually recovered.[22]

Case 96.—E. M. Read, of Lowell, Mass., a mason, aged thirty-five, in enjoyment of perfect health, removed to a residence on Gorham street, Chapel Hill, in 1836. (Previous to this he and his family were supplied with water through a wooden pump.) His health remained good until the early part of 1839, when he began to have attacks of colic, with constipation, his skin assuming a yellowish color. He had pains in the lower limbs, with a sense of weakness, stiffness and numbness. The colic became almost of daily occurrence. Eructations, loss of appetite, with all the variety of dyspeptic symptoms, also occurred. His spirits became depressed, and he became very nervous. These symptoms, which came on very insidiously, in the course of a few months were much aggravated, and from their frequent return, after partially yielding to active cathartics, alteratives, bitters, etc., became alarming. The treatment, which relieved in the early stages, failed to be of any benefit as the case advanced. Practitioner after practitioner was consulted with equally unsatisfactory results. The costiveness became constant, cathartics only contributed to aggravate his sufferings, and he suffered from a sense of stricture, as if a cord was drawn permanently tight around his body at the navel. At this juncture he consulted Dr. James Jackson, and remained a week under his care, in Boston. By him leeches were applied twice freely to his abdomen, with immediate but transient relief; in a few days the pains, etc., returned and leeches were ineffectually repeated. Dr. Jackson advised a strict diet, such as would produce a soluble state of the bowels. This was strictly followed, but without success. No inquiry or reference, up to this time, was made by anyone as to the true cause of the difficulty. About this time similar cases occurred in the same neighborhood. The result was a suspicion as to the true cause, which was at once confirmed by a chemical examination of the water in the wells, which was found to be supplied to all families in that portion of the city through lead pipes, in some cases several hundred feet in length. No time was lost in substituting other material for lead in supplying water to the family of Mr. Read, which example was soon followed in the case of other sufferers. From this time Mr. Read's symptoms began to mitigate, and he gradually regained his health.[23]

Cases 97, 98.—Mrs. and Miss Read[24] became affected about five or six months previous to the illness of Mr. Read. The former suffered from frequent attacks of colic, pain in the limbs, nausea, vomiting, numbness and stiffness in the lower extremities—the latter from spinal irritation, dyspepsia and convulsions. After the removal of the lead pipes they have recovered perfect health.

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[22] For further details, vide *Trans. Amer. Med. Assoc.*, Vol. V., p. 200.

[23] Dr. Dalton, *Trans. Amer. Med. Assoc.*, Vol. V., p. 201.

[24] *Ibid.*

CASE 99.—A railway engineer, who had been in the habit of drinking water from the spouts of lead-lined tanks, used for replenishing the engine boilers. He had colic for five days, with bad constipation, pain in the trunk and limbs, and a peculiar aching in the hands and arms. He lost the strength of one arm so that it became nearly useless. During two days he had tremor and delirium. Under medical care, he recovered from all his symptoms, but had a recurrence of them. Many of his fellow laborers on the railway, who drank from the same tanks, had complained somewhat.[25]

CASE 100.—A young man of Chelsea[26] who, having for some time been subject to abdominal pain and costiveness, was, from four to six weeks later, attacked with severe pain in the region of the navel. His pulse was between 50 and 60, the countenance sallow, and the characteristic line on the gums was marked. These symptoms led to the suspicion of lead poisoning. Upon inquiry it was learned that a short time previous to this attack a lead pipe, through which was drawn, from a well, the water which he was in the habit of using, had been greatly corroded, and a new one was substituted for it. This latter pipe was then changed for a gutta-percha tube, and the patient soon made a complete recovery. Other members of the family, and previous occupants of the house, had been subject to abdominal pains.

CASES 101, 102.—Two children[27] of a family were attacked with lead colic, the blue lines were well marked on their gums. In one of them, wrist drop occurred in a few days. The water used by the family was examined and found to contain a large quantity of lead. All the members of the family were soon affected, and upon the gums of all of them the blue lines could be seen. Some had colic, others wrist drop, and there has been more of an effect upon the mind than is usually observed. One of them became semi-idiotic.

CASE 103.—Dr. Putnam reports a case from the Massachusetts General Hospital. The only possible source of lead, which was the cause of his illness, was the drinking-water, which, however, has been used by many others with impunity. Analysis has shown that this, as well as the patient's urine, contained lead, although in small amount.[28]

CASE 104.—A. B., aged fifty-four, of Taunton, Mass.[29] The patient has noticed numbness in his hands, and, afterwards, in the left foot, which has gradually extended up the leg and back. He had some constipation, nausea, etc., and a peculiar staggering gait of gradual onset and progressive character. The urine was tested by Mr. Thomas Farmer for arsenic, but the results were negative. The patient was then put on five-grain doses of iodid of potassium, and the urine analyzed for lead by the same chemist, who reported that it contained a very large quantity of lead. The only possible source discovered was a tin-lined copper kettle in which the hot water, which he had been in the habit of using freely, was heated. The kettle was then examined by a chemist, Mr. George F. Chase, Superintendent of the Taunton Water Works. The lining was nearly gone, nevertheless he obtained traces of lead from the water which he kept boiling in the kettle. Four months after the discovery of the source of lead, and the commencement of appropriate treatment, the patient was helpless

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[25] *Boston Med. and Surg. Jour.*, Feb. 7, 1856.

[26] *Ibid.*, Dec. 25, 1856.

[27] Dr. Bowditch, *Boston Med. and Surg. Jour.*, Sept. 2, 1858.

[28] *Boston Med. and Surg. Jour.*, Vol. XCIV,, p. 41.

[29] *Ibid.*, Oct. 30, 1890.

and death ensued. In this case ataxia, although rarely caused by lead, was a prominent symptom.

Case 115.—J. S. Green, of Waltham, Mass., a graduate of the Boston Medical School, however not a practitioner, has been suffering with paralysis of his lower extremities for a considerable length of time. Dr. Horatio Adams, his attending physician, after learning that his drinking-water came through 140 feet of lead pipe, attributed the paralysis and all his other ailments to lead poisoning from the drinking-water. The water was afterwards examined and found to contain a large amount of lead. Further details are furnished by the patient himself.[30]

Case 124.—This patient[31] has been repeatedly under treatment for dyspepsia and occasional impairment of the senses. Her recovery was always protracted, and at no time satisfactory, until after a certain time she spent in the country. Later she experienced a recurrence of those symptoms in an aggravated form, with the addition of loss of sensation and impaired motion of the right hand, leg and foot. On this occasion the real cause of her trouble was, for the first time, suspected by her attending physician. The water she had constantly used, for the past four or five years, was found to contain lead.

Cases 105, 106, 107, 108, 109-112, 113, 114, 119, 120-123.[32] —All are well-ascertained cases of lead poisoning, presenting most pronounced symptoms of colic, some arthralgia, and others paralysis, the cause being directly traced to lead in the drinking-water. All, except Cases 105 and 106, have recovered after the removal of the cause; these two died.

Cases 125 and 126.—Father and daughter both were affected with colic.[33] Her chief symptoms were anemia, epigastric pain, vomiting, headache and jaundice, for which the three physicians who attended her could assign no cause. Later she had wrist drop. The father suffered greatly from the colic and constipation, and on his gums the blue line was distinctly marked. This led the attending physicians to suspect poisoning by lead, and on investigation it was found that the water, which the family used for culinary and drinking purposes, was brought from a well through a lead pipe 50 feet in length. On removal of the cause with appropriate treatment both completely recovered.

Cases 135, 136 and 137.—Mr. H., aged fifty-seven years, had always enjoyed good health until the spring of 1869. Early in May he found himself losing health and strength, tormented continually with pain and a constriction in the abdomen. In June next he had an attack of colic, which afterwards often re-occurred. He also had obstinate constipation and nausea for many days. The abdomen was considerably and uniformly depressed, and the blue line on the gums was distinct. Mrs. H., of good health and a strong constitution, had similar symptoms to those of Mr. H. Their son-in-law, Mr. E., however, was more severely afflicted, being extremely emaciated and feeble. It was found that the water they drank was brought from a well, through a lead pipe about 40 feet in length. The surface of the pipe, inside and outside, was coated with carbonate of lead, and in several places it was deeply corroded. The water was analyzed by the professor of chemistry at the Agricultural College, Amherst, and reported by him to contain lead and an unusual amount of carbonic acid.

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30 *Trans. Amer. Med. Assoc.*, Vol. V., p. 212-218.

31 Manchester *Guardian* (England), April 24, 1852.

32 *Trans. Amer. Med. Assoc.*, Vol. V.

33 Report of State Board of Health of Mass., 1871, 23.

The carbonic acid was furnished by a wooden cover which had decayed and fallen into the well. After the cause was removed they all recovered.[34]

Cases 138 and 139.—A lady and her niece, both living at Buchauness Lodge, a cottage residence of the Earl of Aberdeen. They had several of the minor ailments of chronic lead poisoning, *i.e.,* vomiting, constipation, pain in the limbs and stomach, etc. The drinking-water was found to present a white incrustation after standing for some short time, and it was found, by several tests, to contain lead. These patients used the water but eight months.[35]

Cases 127, 128, 129, 130, 131, 132, 133 and 134.—All are positive cases of lead poisoning, traced in some by chemical analysis to the drinking-water as the cause. Most all have had paralysis and wrist drop, terminating in recovery after the removal of the cause with the exception, however, of three; these have been permanently injured.[36]

Cases 140-144 inclusive.—Mr. T. Van La H., an eminent pianist of New Orleans, his wife and three daughters, were all taken about the same time with cramps in the stomach, bowels and extremities. Prof. James Jones, of New Orleans University, was called to attend them and pronounced the malady to be lead poisoning. On inquiry and examination his diagnosis was confirmed. The water for cooking had been drawn for years from an elevated cistern, through a lead pipe four or five feet long which by chemical examination was found to contain lead. One daughter, four years old, lived two months in a paralytic condition and died. Another, three years old, lived eight years with great debility and other lead symptoms, and died paralyzed. The oldest daughter, Miss Eva, not improving under regular medical treatment, was placed under the care of a distinguished homeopathist of New Orleans, who gave her morphine to relieve her sufferings. Diplopia soon followed, but the morphine was continued, and she awoke one morning perfectly blind. Paralysis followed shortly afterwards. The doctor was called in; he said she was dying, and left. A regular physician was again called. For three months she could not move hand or foot, and was confined to bed for nearly three years. She finally recovered fairly good health. Mrs. La H. was sick three years with lead colic, cramps in the extremities and intense debility but was never paralyzed except an agitans of the hands. Mr. La H. suffered intensely from the beginning, and wrist drop was concomitant with the colic. The tongue and muscles on the right side were partially paralyzed, the right arm and leg completely. Deglutition was difficult, respiration irregular, and the heart's impulse violent. His intellect failed him, and he could not recognize his friends around him. Later the difficulty of breathing was augmented, the lungs evidently being greatly congested; the sufferer finally died with a gush of blood from the mouth containing large coagulated clots. It is to be understood that the attack of lead colic occurred fifteen years previous to this paralytic attack.[37]

Cases 145 and 146.—Two servant girls were affected with colic, constipation, etc., for quite a long time, and, although warned against the use of the drinking-water, which was found to contain lead, they persisted in its use until they wasted almost to skeletons. They finally ceased using the water, after which they recovered.[38]

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[34] Second Annual Report of the State Board of Health of Mass., 1871, p. 27.

[35] Professor R. Christison, *Trans. Royal Soc. of Edinburgh,* Vol. XV., Part II., 289

[36] Report of State Board of Health of Mass., 1871.

[37] Half-yearly Compendium of Med. Science, Jan., 1874, p. 22.

[38] J. B. Harrison, On Contamination of Water, etc., London, 1852.

TALKS TO GENERAL PRACTITIONERS.

THE USE AND ABUSE OF PESSARIES.

BY EDWARD E. MONTGOMERY, M.D.,

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THE maintenance of the uterus in its normal position by mechanical means was formerly a very popular method of treatment. With the increased popularity of surgical measures, the pessary has become more and more an instrument of the past. This disuse of mechanical measures is not surprising, as it is but natural that the sufferer should rather seek measures which will insure a cure, than to submit to those which, at best, are but palliative. Not all patients, however, are willing, or desirous, of undergoing a surgical procedure, even though through it complete relief can be promised. Many such patients are enabled, through the use of the pessary, to secure complete relief while wearing it, and a few, ultimately, to secure such changes as will render them comfortable, even after its removal. In order to determine the value of the pessary, it is necessary to consider the class of cases in which this instrument should be of service.

First, it must be understood that not every case of displacement must necessarily suffer inconvenience, as there are both forward and backward displacements which do not give rise to symptoms, and it is only when the displacement is complicated by the existence of inflammatory conditions that the individual becomes aware of the existence of an abnormal uterine position. There are cases, on the other hand, in which no abnormal position of the uterus is determinable by bimanual investigation, in which the use of an instrument affords relief. In other words, a patient who suffers from more or less congestion or inflammation of the pelvis, with tenderness of the broad ligaments, and a heavy uterus, where the traction or jarring of the pelvic organs produces pain, fixation with elevation of the organ is accomplished by the introduction of a pessary and is attended with gratifying relief. This explains how the patient, who is suffering from an anteversion, obtains relief by the use of a retroversion pessary. It is simply that the pessary raises the organ to a higher level, gives it support, prevents dragging, and thus makes the patient more comfortable. It is important that the pessary should be made to fit the individual, rather than the individual to fit the pessary. In other words, the instrument must be one which will not make undue pressure and thus do injury. The determination of the proper size for the pessary is usually accomplished by passing two fingers into the vagina, measuring the distance to which the posterior fornix of the

vagina can be raised, without undue pressure. This is determined by estimating the point on the index finger which would be bisected by the plane of the anterior surface of the symphysis pubis. The roominess of the vagina laterally is determined by separating the two fingers. Thus we can arrive at a comparative estimate of the length and width of pessary that should be required. An instrument which makes undue pressure on the posterior vault of the vagina causes abrasion, ulceration, formation of granulations, and, if neglected, may lead to the pessary becoming embedded, or it may cause perforation. If such a pessary is worn for some time, it produces cicatricial tissue which renders the subsequent use of the instrument painful and difficult.

While the patient wears a pessary it should be remembered that it is a foreign body, whose presence increases vaginal and uterine secretion, so that measures must be instituted to secure cleanliness. This is best accomplished by the use of hot vaginal douches, once or twice daily as the conditions may indicate. It is extremely important to induce the patient to realize that astringent injections should be avoided, as they lead to the deposition of salts upon the pessary, which roughen its surface, increase the irritation and lead to further abrasion and ulceration of the vagina. A person wearing a pessary should be kept under observation. The instrument should not be permitted to go longer than two months without being removed, cleansed, and careful examination made of the vagina to determine that no injury from its presence results. It is just as important that the pessary should not be too small as too large, for a small instrument fails to serve the purpose for which it is used, drops down with the posterior bar pressing more against the rectum, forming an obstruction in defecation, or the instrument may turn, as it is frequently found to do, and lie across the pelvis, or with its posterior surface anterior, or even upside down.

One abuse of the pessary is to regard it as an instrument for replacing the uterus. It should be kept in mind that a pessary should never be used until the uterus can be properly replaced. The existence of adhesions which bind down the uterus, which prevent its being raised to its proper situation, contraindicate the use of the pessary, as what is a mere retroversion may, by the improper use of the instrument, be converted into a retroflexion, a condition more difficult to correct, and which adds very much to the distress and discomfort of the patient. A pessary very frequently is regarded as an instrument which supports the uterus by the fundus upon its posterior bar, but such is an incorrect idea of its action. The pessary does not directly, but indirectly, support the uterus. The uterus should first be replaced in its normal position, then a pessary, sufficiently long to make pulley-like traction upon the posterior fornix of the vagina, introduced. It draws upon the posterior surface of the cervix, lifts it upward, while the other end of the lever, the fundus, must necessarily drop forward; consequently, the posterior surface of the uterus is nowhere in proximity to the posterior bar

of the pessary. The Schultze, figure of 8 pessary, grasps the cervix in one of its portions and lifts it up, thus making sure that the other end of the lever falls forward. The cradle pessary has the cervix rest against its anterior bar, which curves backward and thus accomplishes the maintenance of the uterus forward. It must be considered an abuse of the pessary to use it where the patient suffers no inconvenience from the displacement. Second, where inflammatory or perimetric adhesions exist which preclude the possibility of maintaining the uterus in its normal situation during their existence. Third, in cases of large uteri with acute retroflexion. In such cases the uterus is liable to slip behind the posterior bar and be crowded by it against the sacrum.

GENERAL CONSIDERATIONS OF THE MUCOUS MEMBRANES OF THE UPPER RESPIRATORY TRACT.

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(*Continued.*)

It might be well to give some examples besides gouty and rheumatic diathesis in which the local lesion is controlled by a systematic condition. Take, for example, individuals who are subject to chronic constipation; there will be absorption and infection from the intestinal tract; there will be carried into the blood irritating materials which in themselves, in the attempt of the mucous membrane to eliminate, will act as irritants. Besides, the intestinal venous circulation is an enormous one; any obstruction to this circulation from pressure will necessarily slow the general venous circulation and cause damming back of the blood, or cyanotic congestion, in not only immediate, but remote structures. This cyanotic congestion causes over-distension of the blood-vessels, and not only over-distension, but long-continued distension, which thins the vessel wall and permits of rapid leaking of serum into the perivascular tissues, causing that sluggish, boggy edema which resists all our efforts of local treatment. Many a nasal or pharyngeal mucous membrane is practically ruined by the indiscriminate use of the cautery or knife for the relief of this condition, the sole objects apparently being to give *space,* regardless of the destruction of tissue. Had the treatment been directed toward the true cause, the nasal mucosa would have remained intact, and after the relief of the congestion the individual have left a normal secreting mucous membrane. Again, take, for example, cases of children who are mouth-breathers, due to some nasal obstruction; this necessitates a classification as to cause. In a general way they can be

classed, first into obstructive nasal lesions due to malformations, growths, obstruction from trauma, and foreign bodies; and, second, where the condition is fairly normal as to contour and structure, yet from some systemic condition, owing to damming back of the blood, there is brought about an edematous condition of the nasal and naso-pharyngeal tissues. The pharyngeal tonsils (adenoids) are normally present in children and are enlarged in two ways, either by overgrowth or by inflammatory or cyanotic change. If the child is a mouth-breather day and night, you are generally correct in your deduction that the obstruction, whether it be due to some swelling in the nasal mucosa or enlargement of the naso-pharyngeal glands, is a permanent one; but if your child is a mouth-breather *at night only*, you will generally find that the obstruction is due to a vascular engorgement, usually a cyanotic congestion; when such is the case, treatment should be directed toward the relief of this systemic condition, and not operative procedure. The gland is normally present in childhood, and when it does not obstruct nasal breathing or occlude the Eustachian orifice, it should not demand operative interference; and it is only when it obstructs nasal breathing or occludes the Eustachian orifice that it passes from a histological to a pathological structure. Quite often in children the enlargement is due to this cyanotic congestion, and when attention is paid to the intestinal tract and the child relieved of a constipation, regardless of cause, whether it be due to intestinal worms or some atony causing deficient peristalsis, often the glandular enlargement causing interference with nasal breathing disappears.

(To be continued.)

COUNTING THE BLOOD CORPUSCLES.

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THE "blood count" has a terrifying effect upon the minds of many practitioners, presenting to their imaginations billions of red and white blood corpuscles to be enumerated. In reality, however, it is a very simple procedure, requiring for successful accomplishment a microscope (and no up-to-date physician should be without one), a blood-counting instrument, and a little patience braced by determination. No expertness is necessary. By this I do not intend to convey the impression that an expert will not make the blood count more quickly and with more accuracy than a tyro, but I wish to impress the fact that anyone may in time become expert without any special instruction, save the general directions laid down in this "Talk." Let me emphasize the following points: 1. Blood-counting

is a very important aid in physical diagnosis. You can no more make a positive diagnosis of anemia without a blood-count than you can determine the existence of albuminuria from the edema of feet and ankles or lower lids, without making an examination of the urine. Only recently I examined the blood of a young man who was supposed by experienced practitioners to suffer from anemia, and yet his blood showed 5,200,000 red corpuscles to the c.mm. A blood-count will often swing the pendulum in the direction of a diagnosis of carcinoma in obscure and doubtful cases. Especially is it advisable when you wish to determine the progress of a case of anemia under treatment. The pale visible mucous membranes are inadequate to keep you well informed as to how quickly the vitiated blood responds to the treatment. Moreover, systematic blood-counting is almost indispensable when one wants to keep a full record of his cases with the view of reporting them.

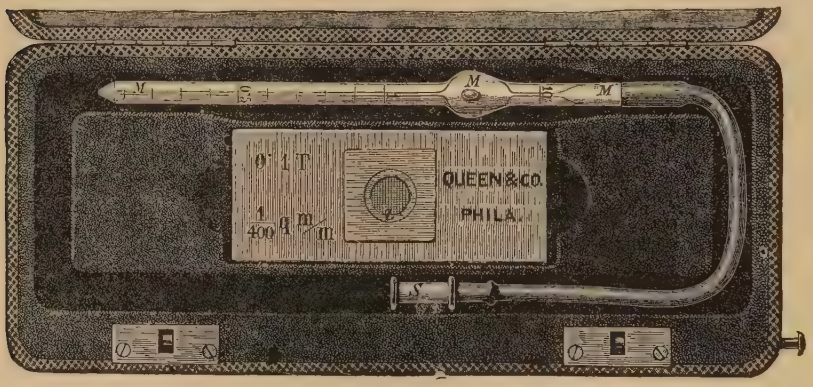

Fig. 1. Thoma-Zeiss Hemacytometer.

2. Having determined to take up blood-counting, procure the best instruments, regardless of cost. The old saying that "the cheapest is often the dearest," is also true in this case. A cheap instrument is inaccurate and tends to discourage any effort on the part of the practitioner, since the results are not conclusive. In blood-counting, each error, however slight, is multiplied several thousand times, thus invalidating the entire process of examination.

The apparatus most useful is the Thoma-Zeiss Hemacytometer, an instrument almost universally adopted. It consists of a counting slide and one or two pipettes, one for the red and the other for the white blood corpuscles. The slide is of ordinary size, made of thick polished glass having at its centre a thin square of glass cemented on the surface. The latter has a central circular opening nearly filled in by another glass disc $\frac{1}{10}$ mm. thinner than the square surrounding it, thus forming a chamber with a depth of 0.1 mm. The surface of the disc is divided by a series of micro-

scopic lines into 400 squares, each having a square area of $\frac{1}{400}$ mm. and a cubic capacity of $\frac{1}{4000}$ mm. Each quadrant of 16 squares is inclosed by additional lines placed between the lines marking the square; in other words, 3 parallel lines on each side form the frame of a quadrant. The pipette consists of a graduated capillary tube expanding near its upper end into an ovoid chamber, which contains a glass pearl for mixing the blood with the diluting fluid. The capacity of the tube is 1 mm., while that of the chamber between the marks 1 and 101 is 100 mm. Thus, by drawing up the blood to the mark 1, a dilution of 1 to 100 is obtained, while when drawn up to the mark 0.5, the dilution is 1 to 200. The second pipette for counting the white blood corpuscles is similarly constructed, except that the bore is larger and the tube is graduated for a dilution of 1 to 10 and 1 to 20. The instrument is also supplied with cover glasses, with ground surfaces.

To make a successful blood-count, strict attention is to be paid to details. These are apparently insignificant, and yet failure will follow the efforts of the careless person who does not observe all the precautions here laid down. 1. Have everything ready for immediate use before you obtain the drop of blood. 2. Observe the most scrupulous cleanliness, not for aseptic purposes, but to prevent the smallest particle of dirt or any other foreign body from obscuring the field of vision, and thus interfering with counting. The diluting fluid, therefore, is to be filtered every time it is used; the slides washed in plain water and carefully dried (no alcohol or ether should be used, as the cement is likely to be dissolved out); the cover glasses to be cleansed in acid alcohol; the pipette, above all, perfectly clean and dry (of the method of cleaning it, I shall speak later). 3. Carry out the first four stages of the procedure as rapidly as possible. The successive stages are as follows: 1. Clean the part from which the drop of blood is obtained. 2. Make a puncture free enough to allow a flow of two or three large drops. 3. Suck a drop into the capillary tube of the pipette up to the mark 0.5 if a dilution of 1 to 200 is desired, or to 1 for a dilution of 1 to 100. 4. Having rapidly wiped off the end of the pipette, transfer it at once into the diluting fluid and draw up the latter to the mark 101. 5. Keeping the tips of your fingers on the ends to prevent spilling, shake the pipette vigorously for about two minutes. 6. Reject the first two or three drops and then deposit one on the centre of the disc, or, as some do, fill in the entire chamber. 7. Place the cover glass on the fluid, carefully avoiding air bubbles, and press firmly at the sides (not in the centre) until you see Newton's rings. 8. Place the slide on a level surface for a few minutes in order that the corpuscles may become equally distributed. 9. Place the slide on the stage of the microscope and take up the process of counting.

Now as to details. Normally, the blood corpuscles are so numerous and tightly packed that to count them on such a small area as $\frac{1}{4000}$ cubic mm. is absolutely impossible, not to mention the fact that the coagulated blood

will form a layer of sufficient thickness to cover entirely the lines which mark the squares. It is therefore necessary to dilute the blood, for two reasons: 1. To prevent its coagulation, preserving the integrity and shape, as well as distinctness, of each corpuscle; and, 2, to dilute it to a degree sufficient to permit the counting. For that purpose we use either Gowers' solution, which consists of:

Sod. Sulphate	gr. 112
Acid. Acetic	f3 v
Aquae	f℥ iv

or Toisson's solution, prepared according to the following formula:

Methyl violet	0.025 gm.
Sod. Chlorid.	1 "
Sod. Sulphat.	8 "
Glycerin (neutral)	30 c.c.
Aquae destil.	160 c.c.

The latter is the one universally preferred. It possesses the distinct advantage of staining the white blood corpuscles, thus enabling the beginner to avoid them in the count. Besides, in looking over the entire field with a low power, one can approximately judge of the proportion of the white corpuscles to the red. To obtain the blood, a puncture is made either in the pulp of the finger or the convex surface of the lobe of the ear. The latter situation is far preferable. The state of nervousness and even fear into which many persons are thrown by this " operation " is avoided. Some neurotic people will almost faint from the sight of their own blood, however slight the amount, and in these cases the lobe of the ear offers a special advantage. Again, the pain is far less when the ear is punctured, and no pressure is required to keep the patient from instinctively withdrawing the part before the puncture is complete, which makes a second, and often a third, puncture necessary. In children the ear can be punctured with the greatest facility and the least disturbance. For making a puncture, a surgical lancet-shaped needle, the sharp point of a small bistoury, or, what is the most convenient, a lancet especially devised for this purpose (see Fig. 2), are used. An ordinary sewing-needle is often employed, but it

Fig. 2. Lancet for Making a Puncture.

offers the objection of too deep a puncture, and yet not free enough to permit a flow of a large drop of blood, besides being more painful.

You should not press *gently* with the point of the instrument until it enters the skin, but, with a quick, rebounding movement of the hand, stab the skin to the depth of $\frac{1}{8}$ to $\frac{1}{4}$ of an inch, according to the condition of the superficial circulation. In this connection it is well to bear in mind the

possibility of hemophilia, and it is, therefore, always best to eliminate this affection before a *deep* puncture is resorted to. (A very slight puncture in bleeders is quite sufficient.) Be careful to avoid any pressure on the parts, as it will dilute the blood by causing a transudation of serum. In sucking up the drop, always keep the point of the pipette under the surface to prevent the entrance of air-bubbles. The latter should also be carefully avoided when the cover-glass is placed on the disc. For this purpose it is best to place it by a sliding motion, expelling the air-bubbles as the cover glass is moved from right to left. Should any air-bubbles remain on the disc, the manipulation is repeated after cleaning the slide. Once the blood is mixed with the diluting fluid, the counting can be done at leisure. This is certainly a redeeming feature, and will appeal to the busy practitioner who, in such cases, invariably offers as an excuse the lack of time and frequent interruptions by patients. You can count the blood after a lapse of minutes or hours, by day or night. The blood corpuscles are best seen and most conveniently counted under a moderately high power. Objective 6 and ocular 2, Leitz, or objective $\frac{1}{4}$ and ocular 1 inch, Queen & Co., are the most serviceable combinations. The illumination should be adjusted to suit each case and conditions present. The position of the sub-stage condensor, mirror and diaphragm should be so modified as to render the squares distinctly visible, and, as a rule, a dark illumination is best. Having placed the slide in position, locate first the squares. This can be done by the low power. Then find a quadrant of 16 squares inclosed, as I have mentioned above, within a frame made of three parallel lines, and commence counting from the left-hand upper corner. Count the corpuscles of each square of the upper row, then the lower from right to left, then the third from left to right, and, finally, the last from right to left. This order may be reversed either from the right first or from above downward. The number of corpuscles in each square should be marked down on the paper in the order in which the counting is done. This will not only relieve your memory, but will always show how many squares and which ones you have counted. Some of the corpuscles will be found astride on the line or slightly overriding it. To avoid counting these twice, make up for yourself some rule by which you will always be guided. For instance, count all corpuscles within the square and all on the upper and left side border, not counting any on the lower or right side lines. Having counted 16 squares, divide the sum total by 16 in order to get the average of each; then multiply by the dilution, either 100 or 200, as the case may be, and, finally, multiply this by 4,000, which will represent the number of corpuscles in each c.mm. For example: The first square contained 12, 2d 10, 3d 11, 4th 9, and so on, the total number being 192. This, divided by 16, gives an average of 12 corpuscles to the square. The dilution, we may suppose, was 100, the number of corpuscles in 1 mm. will be $12 \times 100 = 1{,}200$. Each square has a cubic capacity of $\frac{1}{4000}$ of a c.mm. Consequently, the number of corpuscles in a c.mm. will be $1{,}200 \times$

4,000 = 4,800,000. This calculation can easily be remembered by the following formula:

$$\frac{\text{Corpuscles} \times \text{dilution} \times 4{,}000}{\text{No. of squares counted.}} = \text{corpuscles in 1 c.mm.}$$

To obtain most accurate results, 2 or 3 quadrants of the same drop are counted, or 2 to 3 fresh drops used. In the latter case, the pipette should always be thoroughly shaken before a new drop is expelled. A similar procedure is employed in counting the white blood corpuscles, only the diluent fluid is ⅓ to ½ per cent. acetic acid, to which a little gentian-violet may be added if a stain is desired. The acetic acid destroys the red corpuscles, while the white become more prominent. In cases where the question of expense enters largely into consideration, the counting of both red and white can be done at the same time. Only in this case the dilution should always be 1 to 200 and at least 256 squares counted. The white cells are stained, and, therefore, easily recognized, and the whole field can be gone over in a few minutes. Having determined the entire number of white corpuscles, proceed with the calculation in the manner described above. The normal proportion of red blood corpuscles is 5,000,000 to the c.mm., but this will vary under different circumstances, even in health, and a slight variation below or above the normal limit is not to be looked upon as pathologic. In this connection it is also well to bear in mind that after a severe diarrhea the number of red corpuscles is considerably increased, reaching as high as 7,000,000 to the c.mm., this being due to the withdrawal of plasma from the blood. On the other hand, copious drinking may temporarily diminish the number of corpuscles by the reverse effect. The proportion of white blood cells is normally even more variable, the variation extending from 1 to 300 to 1 to 700 red ones. Having completed the blood count, invariably clean your apparatus. *Never put away the pipettes without thoroughly cleaning them.* Too much emphasis cannot be given to this rule. Any instrument is best cleaned immediately after using it; especially is this the case with the blood-mixing pipette, the capillary tube of which becomes easily clogged up, rendering the instrument worthless. Besides any dirt adhering to the inner sides of the ovoid chamber will render an accurate dilution impossible. It is comparatively easy to clean the instrument right after its use, but it is very hard, if at all possible, to accomplish this 24, 48 hours, or a week later. To clean the pipette, run through it first distilled or clean water, then strong alcohol, then ether, and, finally, a current of dry air to evaporate the latter. (The pipette is dry when the glass pearl is freely movable and does not cling to the sides.) The washing and drying are best accomplished by a double bulb from an atomizer. This not only saves time, but also your lungs. Should there still remain some particles of dirt, clean them with some strong acid, alkali, or acid alcohol.

Another method for determining the relative proportion of red blood corpuscles is by means of the hematokrit, as first devised by Blix. It con-

sists of a metal frame in the shape of two arms, each carrying a small capillary tube 50 mm. in length and 0.5 mm. bore, graduated from 0 to 100. The blood is obtained in the manner described above. The tube is completely filled with blood by means of a rubber tube connected with a dropper. Both ends of the tube are quickly covered with a little vaselin so as to prevent the blood from adhering to the part of the frame with which the terminal ends come in contact. The tube is then placed in the arm, its outer end fitting into a small, cup-like, rubber-cushioned depression, while the

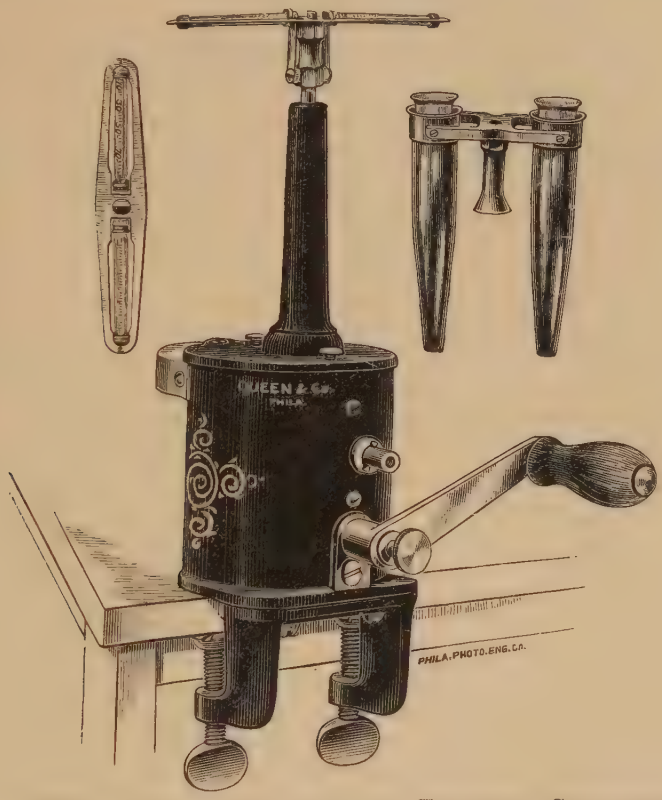

FIG. 3. A DOUBLE-SPEED CENTRIFUGE WITH TUBES FOR SEDIMENTATION AND HEMATOKRIT.

inner end is held by a spring. The whole is adjusted to a double-speed centrifuge, or an electric centrifuge especially arranged for this purpose, and rotated at a speed of 70 revolutions of the crank or 10,000 revolutions by the electric motor, per minute, for 2 minutes. The tubes are then removed and the percentage read off, the scale being rendered visible by a magnifying lens front. The volume of the red blood corpuscles will be seen as a red column, while the white occupy a shorter column above, being almost invisible, except in cases of leucocythemia. Each degree of the scale

represents the per centum by volume and is supposed to contain 100,000 red blood corpuscles. Thus, if the red column reaches the mark 50, the volume is 50%, while the number of red cells is 5,000,000. The main objection to this instrument is its inaccuracy compared with an actual count. The volume will depend on the density of the serum, the relative size and elasticity of the individual corpuscles. It is not at all certain that each degree will represent equally 100,000 corpuscles. Again, in the centrifuge operated by hand, it is very difficult to keep up the required number of revolutions. However, the low price and simplicity of technic recommend this instrument to those who are not in the position to buy an expensive hemacytometer and yet want to have more or less definite information as to the condition of their patient's blood. For clinical purposes, the hematokrit may serve well in determining the progress of a case under treatment. You can establish your own arbitrary rules as to number of revolutions, etc., and, following them out in every case, you get a fair estimate of the relative proportion of red blood corpuscles at each successive examination.

Aniline and Malignant Disease. In 1877, Grandhomme noted that the workmen in an aniline dye factory were liable to severe cystitis, with or without hematuria. Only three years ago Rehn, of Frankfort, stated that he had found that in aniline cystitis, sarcomatous tumors tended to develop in the bladder. Leichtenstern has recently recorded three cases. A man, aged 51, still in robust health, worked at naphthaline and naphthylamine. Cystitis and hematuria set in, and a tumor developed. An operation was performed, and the bladder was excised; it was found to be a mass of sarcomatous growths. The patient died in two days. The viscera were healthy. The other case must bid us pause in holding the vesical growths to be true "neoplasms." A man, aged 31, worked with toluidine, and soon acquired the characteristic appearances of the cachexia which it induces — earthy-pale complexion and greenish discoloration of the hair and nails, with dysuria and anorexia. Micturition became very frequent, but only a few drops of reddish or greenish urine passed at one attempt. A tender, firm tumor developed in the bladder, rising above the pubes. The passage of a catheter and pressure in the hypogastrium caused extreme pain. Salol, uva ursi, tannin, and alkalies with demulcents did no good. Opiate suppositories, subcutaneous injections of morphine, and hot sitz baths, followed by poultices, brought about a cure in the course of over six months. Within seven months the tumor had disappeared. Leichtenstern, who seems to have proved by examination that the tumor in the first case was a sarcoma, admits that he was puzzled by the second case. Possibly it was a simple, but very acute, proliferating submucous cystitis. This subject needs much consideration. Is it a key to the mystery of new growths? May the disintegration of the highly complex groups of carbon compounds in these new dyes stimulate connective tissue cells in an unfavorable sense? Yet, after all, we are not sure that the aniline-bred tumor is, in fact, malignant.—(*Brit. Med. Jour.*)

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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Typho-Malarial Fever So-called. George Dock (*N. Y. Med. Jour.,* No. 8, 1899) discusses at length the appropriateness of this designation and decides that its use is not justified in the present state of our knowledge. The term was first used by Dr. J. J. Woodward to describe (1) fevers in which the typhoid and malarial infections were supposed to be mingled in the same case; (2) adynamic malarial fevers in which a typhoid state developes; and (3) to cover a doubt as to the proper diagnosis. The elder Flint adopted this nomenclature, and many writers have since sanctioned it. Dock, himself, accepted the theory of a possible combination of the two diseases, in a paper written by him, eight years ago, but now declares that he has since made many examinations in suspected cases, but so far has failed to find a case of mixed typhoid and malarial infection. He admits that others have exceptionally found malarial germs in the blood in cases of undoubted typhoid fever, but holds that the clinical picture was in no wise changed thereby. He quotes Janeway, Osler, Thayer and Hewetson as having reported cases of typhoid following malarial fever, or with a few demonstrable malarial organisms, yet without any signs pointing to the existence of a hybrid disease. Laveran, himself, according to Dock, is convinced that neither intercurrent malarial infection in typhoid fever nor typhoid fever following malarial fever, has peculiar features.

Splenectomy in Malaria. Lacetti (*Giorn. Internaz. delle Scienze Med.,* Fascic. 1, 1898) recommends the removal of the spleen in cases of hypertrophic interstitial splenitis, especially when the enlarged spleen is painful. The ordinary congested spleens resulting from chronic malaria may be reduced usually by quinin, arsenic, ergot, strychnin, or even electricity. Lacetti reports having removed the organ in one stubborn case of

splenic enlargement. Six days afterward intermittent fever developed, but was controlled by injections of quinin. He attributes this attack to the sporulation of the malarial parasite, which, according to Pes, may remain latent in the blood for months. The patient experienced also violent pains in the long bones, which, it is suggested, were due to a vicarious action of the bone-marrow.

The Treatment of Malignant Tumors by Bacterial Toxins and Anti-Cancerous Serums. Roncali (*Centralblatt für Bakteriologie und Parasitenkunde,* Bd. XXI., Nos. 21 to 25) has made an exhaustive criticism of this whole subject which is of interest to clinicians, since serum therapy generally concerns internal medicine more than surgery. He points out that fifteen cases only are known in which new growths have been apparently cured by the toxins of erysipelas. In ten of these, erysipelas developed as an intercurrent affection. Unfortunately, the after-history of these ten cases is unknown. *The Medical and Surgical Review of Reviews* (Dec., 1898) summarizes Roncali's conclusions, which show among the strikingly favorable results one case of sarcoma of the neck cured by Kleeblatt, who used injections of pure cultures of the streptococcus, and four (out of a total of 160 cases) were cured by Coley, who injected the toxins of the streptococcus, together with those of the B. prodigiosus. Against these rare successes must be placed a mass of cases in which the injections have not only failed in their object, but have done harm. Pure cultures of the streptococcus have produced erysipelas, hastened metastasis, and caused degeneration of internal organs, especially of the heart. Coley, not satisfied with all these evils, has added to those of erysipelas the toxins of the B. prodigiosus. This combination has no action antagonistic to malignant tumors. Nearly every one who has worked with Coley's fluid has had negative results. Roncali himself, as recommended by the inventor, used extremely virulent cultures of streptococci, obtained from a diphtheretic membrane and subsequently contaminated with the prodigiosus. The results were disastrous. As regards the general health, even small injections caused a violent febrile reaction. The most striking effect, however, was rapid emaciation, and a destruction of red blood corpuscles. The post-mortem appearances coincided with those found in chronic intoxications, and though ascribed by Roncali to the injections of toxins, could have been explained equally well as the result of an auto-intoxication from the malignant tumor. Richet and Hericourt injected the filtered juice expressed from an osteosarcoma into an ass and two dogs, with the idea of injecting the serum of such "immunized" animals into patients suffering from malignant tumors. These writers claim to have had good results, but they have not been confirmed. Emmerich and Scholl use an "anti-cancerous" serum, obtained from sheep, not immunized against infection by the streptococcus, but dying of a severe streptococcic infection. Their method is practically on the same principle as Fehleisen's and Coley's, since the serum is extremely rich in the toxins of the streptococcus erysipelatosus, the only difference between them being that while with Coley's method the organisms secrete their toxins in broth, with that of Emmerich and Scholl they do so in the blood of a living

animal. In all probability, therefore, this serum is more toxic and dangerous than Coley's fluid. Roncali brings forward other theoretical reasons why serum thus prepared can never succeed. The editor of the *Review* thinks this unfavorable decision is premature. The few positive cases of recovery have not been watched long enough to be sure that the cure is permanent, but in a condition so hopeless as malignant disease they indicate the necessity of a further trial of the method; at any rate, in cases which are not amenable to operation.

DISEASES OF THE CHEST.

UNDER THE CHARGE OF

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The Experimental Production of Tuberculous Endocarditis.

Michaelis, of Berlin, and Blum, of San Francisco (*Deutsche medicin. Wochenschr.,* Sept. 1, 1898), have definitely established, by experiments upon rabbits, that the tubercle bacillus is capable of producing a verrucose endocarditis. The bacillus in this situation was first described by Heller, in 1886, then by Cornil and Kundrat, but up to the publication of Leyden's paper, in 1896, such observations were very few. So many cases of verrucose endocarditis occurring in tubercular patients showed no bacilli, that two theories have arisen to explain their absence—the one that the toxins of tuberculosis could produce the endocarditis, and the other threw doubt upon the ability of the bacillus to cause the lesion. M. and B. produced solutions of continuity of the aortic valves aseptically through the aorta and then injected cultures of the tubercle bacillus intravenously. That the valves were injured, was proven by the appearance of a loud diastolic aortic murmur. The rabbits died in from 3 to 6 weeks. The sections showed a diffuse tuberculosis, and the hearts, especially the left ventricles, were much hypertrophied and dilated. The injured aortic valves were covered by hard verrucose deposits. The bacteriological examination of these vegetations disclosed many tubercle bacilli, sometimes in masses and sometimes occurring singly. In one case there was a typical miliary tubercle in the middle of a vegetation. No other bacteria were found. The staining of the bacilli was difficult, and when they occurred singly, they could easily have been overlooked. This fact may explain how so many observers have failed to find the bacillus in cases of endocarditis supposedly tubercular.

Subpleural Ecchymoses and Their Significance in Suffocation. Straussman (*Vierteljahresschrift für gerichtliche Med. und offentliches Sanitatswesen,* III., F. Bd. 15, Hft. 2) recalls the fact that until lately the occurrence of such ecchymoses have been considered of a certain value in the diagnosis of death from suffocation. The writer states that, in the light of more recent investigations, these statements cannot be regarded as trustworthy, and that the small, subserous hemorrhages in the lungs and heart have no practical value as a sign of the cause of death. They occur in other conditions besides suffocation, and they are often not present in the latter case. They only mean that death has occurred from paralysis of the respiration, and not through primary heart failure, and that the respiration has stopped before the heart. In deaths from suffocation, then, they merely denote that the mode of death was a primary arrest of respiration. (From the *Litteratur Beilage der Deutsche Medicinische Wochenschrift,* Sept. 1, 1898.)

The Roentgen Rays and Their Use in the Diagnosis of Tuberculosis. Béclére (*Arch. d'Electr. Med.,* Dec., 1898), in his paper before the Congress of Tuberculosis, held in Paris, in 1898, suggests the employment of both the fluoroscope and of photography by the X-rays as a very valuable aid in the early diagnosis of tuberculosis of the thorax, the first to determine variations in normal movements of the viscera, the second to detect changes in density. He calls attention to the well-known fact that auscultation, percussion and fremitus often fail us in the early and most critical period of this condition. It is, of course, of the greatest importance to detect such a lesion at the earliest possible moment, and also to discover evidences of latent tuberculosis of the lung, lymph glands or pleura. In the routine examination of subjects apparently healthy, by means of the Roentgen rays, there may be found an abnormal opacity, which indicates a consolidation of the lung tissue, a tumefaction of the bronchial glands, adhesions of the layers of the pleura, or of the diaphragmatic to the parietal layer, or a deficiency in movement of the diaphragm of one side. These lesions may or may not be of tubercular origin, and to confirm the diagnosis, he advises the careful use of tubercular injections. Thus it renders the early diagnosis of tuberculosis easy, whether by revealing the cause of a supposed intercostal neuralgia, or a thickening or adherence of the layers of the pleurae, or the disappearance of the costo-diaphragmatic sinus, or immobility of one side of the diaphragm. It may show that a supposedly acute attack of pleurisy in an apparently healthy person may have behind it an unsuspected consolidation at the base of the lung. In the stage of cavity formation, valuable aid may be given in determining the size and location of the softening, and in prognosis. In those conditions which simulate tuberculosis without bacilli, it is needless to point out the advantages to be obtained. The lungs may be perfectly clear and the symptoms may have arisen from a pyothorax encysted between the lobes, which is capable of producing conditions closely simulating phthisis. Béclére closes his article by urging that the method he advocates should be used only as a complement to the usual and established means of diagnosis.

DISEASES OF THE DIGESTIVE SYSTEM.

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Abnormal Reaction of Stomach Contents Producing Constipation and Diarrhea. Sawyer (*Cleveland Med. Gaz.*, Jan., 1899) calls attention to the importance of determining the chemism of the stomach in obscure cases of either constipation or diarrhea. A number of cases of diarrhea among our soldiers, he attributes to a hyperacid condition of the stomach. Of the illustrative cases reported by the author, one is of special interest. The patient, a physician, had a mitral lesion which was fairly compensated. Irregularities in diet and sleep, however, brought about an obstinate diarrhea, which could not be relieved by any medication, from bismuth to half-ounce daily doses of tincture of opium, inclusive. The impaired nutrition finally disturbed the compensation, making the patient's condition quite serious. The stomach was slightly dilated. At first he could not be persuaded to allow the passage of a tube, but additional medication having failed, he consented, and the stomach was washed out. This was followed by immediate improvement, and the patient recovered under lavage, used twice daily. No chemical tests were made, but the gastric contents smelled very sour. In the other cases, similar treatment was followed by the same happy results. In this connection, the author also notes the success attained in the summer diarrheas of infants from the use of the stomach tube. Deficient secretion of HCl is also associated with either constipation or diarrhea, and in these cases lavage will often produce a curative effect. The author explains the etiology of the intestinal disturbance by the fact that an excess of HCl interferes with proper gastric digestion, and the partly digested chyme, being abnormally acid, neutralizes the alkalinity of the intestinal juices, thus further impairing digestion. Again, the presence of this acid material in the small intestine irritates the delicate mucous membrane and the terminal nerve fibres of the plexuses of Auerbach and Meissner, stimulating peristalsis. In deficient or absent HCl, the stomach contents prove irritating from another cause. The starch not being released from its albuminoid envelope, on account of insufficient gastric digestion, acts as a mechanical irritant. Besides, the excessive fermentation in such cases is especially irritating to the intestinal canal. As to constipation, the author, while fully recognizing its frequent occurrence in conditions of altered stomach chemistry, is at a loss to point out the etiologic factors involved.

True Gastralgia. Clark (*Maryland Med. Jour.*, Vol. XLI., No. 5) considers the cases properly called gastralgia to be much less frequent than usually supposed. In the majority of cases in which there is acute gastric pain, the latter is thought to be provoked by either an excess of HCl or by the perverted secretions which are found in a deficiency of the gastric juice. He bears strong testimony to the value of drop doses of Fowler's solution, given preferably before meals, and in the cases where the gastralgic pain is the result of a pure neurosis he has seen these doses often act with great rapidity in relieving the pain. He infers that they may exert some local anesthetic power upon the end organs of the gastric sensory nerves.

Notes on the Demonstrations of Methods in Gastric Therapeutics. Turck (*Lancet,* Jan., 1899) demonstrated, at the St. George's Hospital, London, several of his gastric instruments, notably, the gyromele, or revolving sound, which he claims to be especially useful both for diagnostic and therapeutic purposes. By means of this instrument, it is possible to determine with practically absolute certainty: 1. The exact outline of the stomach on the abdominal walls, the greater curvature, the lesser curvature, the fundus, and the pylorus. 2. The character of the stomach walls: (*a*) Any considerable thickening of the walls is unfailingly discovered because of the varying ease and plainness with which the sponge revolved against the wall can be felt on the outside; and (*b*) the distensibility of the stomach can be more readily and more accurately determined by simply using cables of different degrees of flexibility than it can be determined by any other method. From its distensibility the motor power can be quite accurately estimated in cases where there is no pyloric obstruction, as has been repeatedly found by experiment. The pyloric obstruction, if present, is discovered in the process of the sounding of the stomach, pylorus, and duodenum. 3. In addition to the above complete diagnosis of the physical condition of the stomach, the gyromele has been found to be an unfailing means of discovering atrophy, and, indeed, of distinguishing atrophy from functional achylia. This is due to the fact that the revolving sponge is quite as effective as any test meal for stimulating the secreting glands to almost immediate activity. On withdrawing the cable, the sponge is found saturated with the gastric contents, and this furnishes material for bacteriologic and qualitative chemical tests. If the gyromele is allowed to remain in the stomach for a few minutes, the contents will, within 15 minutes, invariably contain HCl, unless there be atrophy of the HCl secreting cells. In order to thus determine with certainty the presence or absence of cellular atrophy, the gyromele is revolved a little longer than usual, and the stomach contents are examined about fifteen minutes after the withdrawal of the gyromele cable. The contents will then invariably contain hydrochloric acid, unless there be glandular atrophy. Its therapeutic value resides in the removal of mucus and stimulation of the stomach walls. The intragastric reagent capsule and the intragastric resuscitator were also fully described and their usefulness demonstrated.

NEUROLOGY.

UNDER THE CHARGE OF

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Fear Neurosis. Prince (*Bost. Med. and Surg. Jour.,* Vol. CXXXIX., Dec. 22, 1898) finds this peculiar condition very common among musicians. It is usually considered a manifestation of timidity, but while it may originate as such, it persists as an automatic physical neurosis. The physical symptoms of fear are presented without the emotion. It is a phobo psychosis. The predisposing cause is fear, the result of natural timidity, which, by repetition, becomes a true habit neurosis, and while the psychical emotion subsides with increasing experience and years, the physiologic manifestations persist. After the full development of the neurosis, apprehension and excitation by public performance fill the role of an exciting cause. The symptoms of the neurosis are consciousness of being observed, faintness, perspiration, flushing of the face, confusion of thought, depression. In some cases there is desire for evacuation of the bowels. The condition is not one of neurasthenia, and in the treatment of cases this must be forcibly impressed upon the patients. Suggestion, either with or without hypnotism, and the artificial creation in the mind of the subject of a fixed idea in line with truth, and antagonistic to the morbid idea, are important parts of treatment.

Contribution a l'etude de la Neurite Ascendante (Contribution to the Study of Ascending Neuritis). G. Marinesco (*La Presse Médicale,* No. XCVI., p. 308) reports a case of ascending neuritis having its origin in gangrene of the right leg. Weakness, atrophy, and disturbance of sensation on the postero-external surface of the right thigh and leg were noted. He found streptococci, leucocytes, and degenerated nerve fibres within sections of a nerve taken from the gangrenous tissue, but sections of nerve from areas nearer the cord revealed no bacteria, although leucocytes were present. No bacteria were seen in the spinal cord, but changes in the ganglion cells and perivascular leucocytic infiltration were found. These lesions existed only on the side of the cord corresponding to the gangrene, and only in the lumbosacral region. Marinesco thinks that this case was one of ascending neuritis, beginning in an infection of the nerves, and leading to changes within the spinal cord. The poisonous substance was believed to have been conveyed to the spinal cord by means of the lymphatics of the peripheral nerves. [A report of this case was read by Prof. Leyden before the Verein für innere Medicin, in Berlin, and led to an interesting discussion in regard to the occurrence of ascending neuritis (*Vereins-*

Beilage, No. XIV., *der Deutschen Med. Wochensch.,* May 12, 1898). Authentic cases of ascending neuritis are rare, especially when suppuration has not occurred.]

Recherches sur l'Atrophie Musculaire et la Contracture dans l'Hemiplegie Organique (Researches on Muscular Atrophy and Contracture in Organic Hemiplegia). G. Marinesco (*Semaine Médicale,* No. LVIII., 1898, p. 465) believes that muscular atrophy is the rule and not the exception in organic hemiplegia. He has found degenerative and atrophic changes in the muscles, but only in three out of sixteen cases of hemiplegia that he examined could he find alteration in the ganglion cells of the anterior horns of the cord, and in two of these cases the altered cells were not numerous and might easily have escaped detection. The intramuscular nerves were normal in all except two of the sixteen cases, and only in one of these two were the alterations very noticeable. In one case he observed paralysis of a lower limb from a lesion situated in the superior portion of the ascending parietal gyrus and in the paracentral lobe. Only ten cases of this character have been reported. Marinesco believes that centers controlling the blood-vessels are situated in the Rolandic area. He believes that the atrophy in hemiplegia is due to the loss of the influence exerted by the neurons arising in the cortex upon the neurons arising in the spinal cord and passing into the sympathetic nerves. While the atrophy is chiefly due to vascular disturbance, it is also due, in part, to immobility of the limb. Marinesco has observed atrophy of the face following removal of the sympathetic nerve for hystero-epilepsy. This fact seems to indicate that derangement of the sympathetic system may be the cause of facial atrophy.

MEDICAL DISEASES OF THE KIDNEYS.

UNDER THE CHARGE OF

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The Use of Methylene Blue in the Diagnosis of Renal Diseases. Cabot (*St. Paul Med. Jour.,* Feb., 1899) states that the means at present for diagnosis of nephritis are unsatisfactory. Autopsies may reveal a nephritis which, during life, showed no albumin; again, we may have albumin and casts, and autopsy reveal no nephritis. Nor is the estimation of urea or total solids diagnostic. The test Cabot wishes to consider is a

new one by Achard and Castaigne. Five cm. of powdered methylene blue are dissolved in 20 parts of sterile water and injected deeply into the patient's buttocks, under antiseptic precautions. With deep injections there is no pain or irritation. At time of injection the patient is required to empty his bladder. Half an hour afterward he is again to pass water, and again at the end of 1, 2, 4, 8, 12, hours, and as long as the urine remains colored. In normal cases, the blue or bluish-green tinge in the urine usually appears within the first half-hour, and always within an hour. In certain forms of nephritis the color does not appear so soon. In normal cases the maximum coloration, a deep indigo, is reached in about three hours, and the urine is not clear again for two or three days. The drug is given subcutaneously in order to eliminate the influence of possible variations in the rate of gastric and intestinal absorption. Thus, in a case of gastric cancer they found that the blue did not appear in the urine until the fifth hour, when given by the mouth, though the kidney was sound.

Achard and Castaigne report 127 cases, of which 40 came to autopsy. In none was the diagnosis contradicted, although not infrequently every other clinical test proved fallacious. Of the 127 cases, 62 eliminated the blue normally, and none of these proved to have nephritis. Eight died, and at autopsy had sound kidneys, although 3 had shown albumin during life and were supposed to have nephritis. The 62 cases mentioned were made up of grippe, typhoid, rheumatism, pleurisy, phthisis, valvular heart disease, syphilis, chlorosis, gastric catarrh, etc. Three were healthy persons. Sixty-five excreted the blue more slowly than normal. Of these, 20 came to autopsy and proved to have renal lesions, 15 chronic nephritis, 3 pyelonephritis, 1 cystic kidney (no albumin during life), 1 multiple renal infarction. Among the 45 which did not come to autopsy, but in which the blue was excreted more slowly than normal, there were cases of acute gastro-enteritis, broncho-pneumonia, acute pleurisy and typhoid; also various chronic affections other than nephritis. In discussing these latter cases, A. and C. insist upon the hypothesis that their test measures should be decisive —not as to the anatomical lesions, but the functional activity of the kidney; not what it looks like, but what it can do in the way of excretion. They do not believe that permanent anatomical lesions are present in all cases which for a time filter the blue through imperfectly, but that the kidney cannot do its work properly, and that renal insufficiency is present. The inference drawn is as to how well the kidney is doing its work, which is the important matter.

The importance of the test is seen (1) especially in cases of nephritis without albumin, not infrequently met. In 7 cases where the blue was always excreted very slowly, but in which no albumin was present, autopsy showed lesions of nephritis. (2) In albuminuria due to passive congestion, distinguished from genuine nephritis, the methylene blue test is of special value, since congestion and most other causes of albumin (nephritis excepted) do not retard the excretion of the blue, even when oliguria and casts are present. (3) In one-sided lesions of the kidney, such as hydronephrosis, where examination of the separated product of the affected kidney enables us to judge by the color alone the functional

efficiency of such kidney. (4) A. and C. lay much stress on latent nephritis in tubercular patients. In ten cases they found slowness in the elimination of the blue, though only one of these had albuminuria. Seven came to autopsy and had interstitial nephritis. (5) The authors' test is also of value in determining whether in a given case the intolerance of a certain drug is due to renal insufficiency or to other causes. Thus, a patient unable to take salicylates showed slowness in the excretion of methylene blue, pointing to renal insufficiency (temporary or permanent). According to A. and C., a slow excretion of pigment manifests itself in one or more ways: 1. By late appearance, 2, 3, or even 6 or 7, hours after injection. 2. By late disappearance, *i.e.*, not until the 5th, 7th, or even 10th day. 3. by intermittency of the blue color. 4. By masked elimination.

Other authorities supporting this test partially are Bard and Bonnet. They confirm the results for chronic interstitial nephritis, but find in the epithelial or parenchymatous variety that the blue passes through the kidneys, if anything, more quickly than normal, showing here an excess of permeability. Bard does not have his subjects urinate at the time of injection, so whatever color appears within the first hour is diluted by the urine within the bladder. He finds that the normal appearance of the blue begins within one hour, and counts any case in which color appears within half an hour as showing an increased permeability. Bard examined 23 cases, of which 2 were healthy, 9 of primary interstitial nephritis (with 2 autopsies), 3 of secondary contracted kidney (1 autopsy), 3 of epithelial nephritis (2 autopsies), 4 of pyelonephritis (1 autopsy), 1 of mercurial nephritis, 1 of angioneurotic edema, with the following results: (1) Blue was excreted normally in pyelonephritis. (2) In the interstitial cases, primary and secondary, the blue was excreted slowly, just as A. and C. had said. (3) In 5 cases of parenchymatous nephritis, acute and chronic, the blue appeared within half an hour, reaching maximum in 1½ hours, and disappearing within 36 hours. Bard thinks the symptoms in parenchymatous nephritis are due, not to the damming back of the substances which ought to be excreted, as in contracted kidney, but to an excessive excretion and the dyscrasia which this drain induces. Polocki and Guenard tested with the methylene in cases of eclampsia. They found that the blue passes the kidneys as quickly as in labors without eclampsia. Chaufford and Castaigne found in hepatic disease marked intermittency in the excretion of the blue. In 32 cases of cataract tested by Frenkel, delay in the appearance was found in 8, and in 24 a delay in a disappearance of the reaction (72 to 120 hours). In epilepsy, Voisin tested 20 cases and found that during a paroxysm the elimination is slower than in the same patient between attacks. The slowness in the excretion of the blue went parallel to a diminution in the toxicity of the urine, and suggests that the blue test may be used as a short and simple way of ascertaining degree of toxicity. In view of the fact that the failure of sugar to appear in the urine, even after large amounts have been swallowed, may be due not solely to the vigor of the individual's sugar-converting power, but wholly or partly to renal impermeability, Achard recommends that all such tests be preceded by his methylene blue test. Dufour found no

difference in the excretion of blue in the two opposite mental conditions of depression and excitement. By masked excretion, Voisin and Hauser mean cases in which the urine showed no blue in the first few hours after the injection, but a bluish-green color may be brought out by adding acetic acid and heating. Achard and Castaigne confirm this, and name the substance thus secreted chromogen. Cases in which the chromogen appears before the blue they call "dissociated elimination." After testing 28 cases for both chromogen and blue, they concluded, that unless both chromogen and blue are delayed in appearance, no nephritis can be found. A second chromogen was also noticed by A. and C. in decomposed urine. The experience of Cabot and McGirr, themselves, with the deep injections of methylene blue were very unsatisfactory. Only four cases thus treated were reported. In the remainder the drug was given by the mouth. The dose, half a gram, which was diminished to $\frac{1}{20}$ of a gram ($\frac{3}{4}$ of a grain); in 5 the larger doses produced nausea and some vesical tenesmus. The only symptom with the smaller doses was a frequency of micturition. The authors agree with Bard in that (1) cases of interstitial nephritis excrete methylene blue much more slowly than normal cases. (2) Other forms of nephritis excrete normally, or, if anything, faster than normal. (3) The test is harmless and easily performed, and promises to be a real addition to our means of diagnosis and prognosis in cases of nephritis. (4) The time of first appearance of the color would appear to be the most important and reliable of the data furnished by the test.

DERMATOLOGY.

UNDER THE CHARGE OF

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On the Treatment of Carbuncle. Manley (*Ind. Med. Rec.*, Dec. 16, 1898), after criticising both the excision of carbuncles and the conservative treatment by internal remedies and mild local applications, proceeds to a discussion of a treatment which he has successfully employed in 50 cases during the past 5 years. The treatment consists of the injection into the carbuncular tissues of pure carbolic acid. In the beginning papule, 2 or 3 drops of an 80% or 90% solution will suffice; in the suppurating stage, 15 to 30 drops are required. The patient first experiences a burning heat, which is soon followed by a cessation of all pain. The acid blanches and chars all of the tissues and coagulates and destroys the purulent foci. The relief from pain is prompt and the patient's rest and appetite are restored. In no cases were toxic results from absorption of the drug noted. Injections

lose much of their value when used late, although even then they will greatly relieve pain and check the disintegrating processes. The affected area should be cleansed, the surrounding skin protected from escaping acid, the skin sprayed with ethyl chlorid and a long, strong hypodermic needle thrust down to the base of the carbuncle. But one puncture through the integument is needed, the needle being partially withdrawn and then thrust in different directions. Care is necessary to avoid injecting directly into a large blood-vessel, or injuring a nerve trunk. When multiple pustules are present, the phenic acid injections entirely dispense with the need of incisions for the relief of tension and for drainage. One injection, as a rule, suffices for a cure, although a second or third is occasionally needed.

Peculiar and Severe Results Following an Injection of Corrosive Sublimate. De Amicis (*Monatshefte für Prakt. Dermatologie,* Feb., 1899) reported, at the Annual Meeting of the Italian Society of Dermatology and Syphilography, a case of a syphilitic patient who had received 43 injections of corrosive sublimate. During the 44th injection, which was given in the region of the angle of the left shoulder-blade, the patient suddenly experienced a severe pain, with cramps in the abdomen, and vertigo. The same evening, retention of urine occurred, and on the following day there was a palsy of the left leg, the bladder paralysis continuing. By evening, a hemorrhagic herpes zoster had developed, having as its starting-point the site of the puncture. On the third day, a complete paraplegia had manifested itself. The patient died at the end of a month, from septicemia.

Iodoform as an Internal Remedy in Lupus Erythematosus. Whitehouse (*New York Med. Jour.,* Feb., 1899) reports an extensive case of disseminated lupus erythematosus of the superficial discoid variety, successfully treated by the internal administration of iodoform. The patient had been troubled with the disease for three years. She was directed to use lotion containing 1 dram each of sulphate of zinc, sulphid of potash and precipitated sulphur, to 4 ounces of water. This was employed for $2\frac{1}{2}$ months without any benefit. The administration of iodoform was then begun, the drug being given in 1-gr. pills, after meals, the local remedy being continued. During the first few weeks there was an aggravation of the eruption, the lesions becoming more inflammatory in character. At the end of the third week, the redness, inflammation and itching began to subside, from which time on uninterrupted improvement took place. The eruption disappeared entirely in three months. Besnier, in 1880, recorded two cases of lupus erythematosus successfully treated with iodoform.

On the Influence of Pathological States upon the Elimination of Water and Carbon Dioxid by the Skin. Barratt (*Brit. Med. Jour.,* Jan. 14, 1899) has investigated the modifications of elimination of water and carbon dioxid by the skin, produced by the ligation of a limb, and by the application of carbolic acid. The average normal output of water from the skin of the arm (up to the insertion of the deltoid) is, at 35° C.,

about 4 grms. per hour, and that of carbon dioxid about 20 mg. A ligature applied close to the shoulder causes a diminution of water elimination amounting to as much as 20%, whilst the carbon dioxid is greatly increased. The application to the skin of carbolic acid causes a decrease of the elimination of water amounting to about 50%, with but a slight decrease of carbon dioxid. The injection of pilocarpin nitrate, gr. $\frac{1}{100}$ to $\frac{1}{500}$, into the skin of the palm of the hand, produces, shortly afterward, a sensible perspiration in the form of droplets, over a circular area around the puncture. After carbolic acid has been applied to the palm, pilocarpin produces either a few and minute droplets, or, more commonly, none at all. The author points out that these experiments indicate that the formation of carbon dioxid is an expression of the general metabolic activity of the skin, and not of a dermic respiratory function, as is claimed by some. The dry, harsh condition of the epidermis after the application of carbolic acid is due to the arrest of the secretion of sweat.

PEDIATRICS.

UNDER THE CHARGE OF

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Hemorrhage as a Sign of Congenital Syphilis. Gottheil (*Archiv. of Pediat.*, 1898) calls attention to the importance of bleedings in infants as symptoms of congenital lues. He points out that these may be the only mark of the disease, especially at first; but they are almost invariably accompanied by a diminution of the coagulability of the blood similar to that of hemophilia, and the case usually goes on rapidly to a fatal termination. Disease of the vascular walls is one of the most frequent effects of the syphilitic poison, leading to hemorrhagic discharges from the mouth, the bowels, the bladder, or the nose; to blood accumulations under the skin and mucosae, or in the serous cavities and internal organs; or, finally, making the syphilitic eruption itself hemorrhagic. The author urges the importance of remembering these facts in the treatment of infants who have hemorrhagic discharges or a hemorrhagic eruption, the cause of which is obscure.

Hysteria in Children. Mayer (*Penn. Med. Jour.*, Feb., 1899), summarizing in his scholarly paper the views held on hysteria, comes to the conclusion that, notwithstanding our latest advances in nervous pathology, hysteria is still a *terra incognita*. As etiologic factors he considers any con-

dition which weakens or inhibits the psychic forces, or breaks down the will. Predisposing causes are (1) improper education and environment, and (2) heredity. The author attributes a preponderating influence to the former and comparatively little to the latter. Considering the symptomatology, he states that in children hyperesthesia is more often found than anesthesia. Richet's hysterogenetic and hysterofrenatic zones are rarely found. In this connection he emphasizes a very important point in the differential diagnosis between hysteria and epilepsy. In the former the patient resists the opening of the eyes, while in the latter he does not. In hysteria the face is flushed and red, in epilepsy it is pale and colorless. The peculiar chattering of the teeth in hysteria should also be looked for. As to treatment, it is either very difficult or very easy, according to the ability of the attending physician to assume entire control of the patient and surroundings. Isolation in a hospital is often the only means of bringing about a permanent cure. Proper diet, hydrotherapy, massage and electricity are also indicated. Hypnotism, on the other hand, should never be employed in children. Speaking of prophylaxis, the author believes that State interference, together with proper education, could accomplish much in this direction. He reproves the custom of educating children in convents, pensions, and boarding-schools, as one especially predisposing to hysteria. A. R.

Pericarditis in Children. Baginsky (*Klin-therap. Wochensch.*, 1898) supports Henoch's statement that this disease is more common in children than in adults. At the "Kaiser and Kaiserina Friedrich Kinderkrankenhaus," the latter authority observed 64 cases (24 were accompanied by polyarthritis, 11 were tuberculous, 11 had pneumonia [7 with erysipelas, 6 with empyema], 5 had grave diarrhea, 6 measles with pneumonia, 3 had endocarditis. Meningitis, purulent otitis media, and diphtheria, completed the list). Serous, fibrinous, hemorrhagic and purulent forms of this disease may be distinguished in children. The serous variety, irrespective of etiology, is usually ushered in with severe symptoms: high fever, great pain, active, rapid respirations, violent cough sometimes, and a countenance expressive of great suffering. The temperature is irregular, the pulse varies in strength and fullness, and does not furnish us with positive evidence regarding the condition of the heart. The heart of the young child, supported as it is by the large liver of infancy, lies more horizontally than the adult organ; hence, the displacement of the cardiac viscus and the "triangular" outline of cardiac dullness may not appear. The dullness does extend to the right of the sternum, however; though such extension does not enable us to distinguish this affection from cardiac dilatation. Auscultation furnishes the most important evidence, for "pericardial friction" is nearly always heard at the "base." The loud, blowing, endocardial sound (Rosenbach) may be heard as the effusion subsides. The purulent exudate is harder to diagnose, as the amount of pus is usually small. It accompanies grave constitutional conditions, such as erysipelas, pneumonia, empyema, etc. The bacterium coli, streptococci, staphylococci, or the bacillus pyocaneus, may be found in the pus. The tuberculous variety is rare and con-

stitutes a very malignant form. In pericarditis accompanying rheumatism, the heart muscle is often, though not always, affected. The earliest sign here is the enlargement of the cardiac dullness. Next come friction noises which may last for a while and gradually wear away. The heart does not always regain its former size. The fibrinous form, with early adhesions, is the frequent variety which accompanies rheumatism. A second attack of rheumatism may repeat this picture; or, evincing dyspnea, enormous enlargement of the cardiac area, hepatic enlargement, dilation of the cervical veins, and a venous pulse, the child may succumb. The author regards the salicylates as useless in this disease. He lauds digitalis and diuretin. The latter drug may yield astonishing results. Under certain conditions, strophanthus may supplant digitalis.

THERAPEUTICS.

UNDER THE CHARGE OF

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A Few Observations on the Action of Hypodermic Injections of 2 1-2 per cent. Solution of Sodium Cinnamate on Tuberculous Patients. Lovtsky (*Vratch,* Vol. XX., No. 1) emphasizes the well-established fact that the treatment of tuberculosis is mainly hygienic and dietetic. All attempts to kill the bacilli in the organism have met with signal failure, and the only thing left to do is to build up the tissues so as to enable them to fight off the diseased process by fibrous encapsulation of the already affected areas. However, there are many who cannot change their mode of life to any great extent, nor has the community, as yet, built any sanitariums for such patients. In these cases, reliance is to be placed mainly on drugs, and of these Peruvian balsam, or its active principle, cinnamylic acid and its salts, has been found by many competent observers to be the most efficacious. Their numerous observations led them to the following conclusions: 1. The treatment by sodium cinnamate has an invigorating influence on the vascular and nervous systems of the patient, improving digestion and sleep, stopping the night sweats, and in general promoting a feeling of well-being. 2. By proper treatment, small and medium doses of sodium cinnamate are absolutely harmless. 3. Sodium cinnamate causes leucocytosis and inflammation, with subsequent formation of fibrous connective tissue around the tuberculous nests. It probably also aids in the elimination of the poison from the infected tissue, thus aiding it in overcoming the infectious process. 4. Incipient forms of tuberculosis of the lungs are apparently cured in a comparatively short time. 5. In treating

patients with considerable infiltration but without cavities, the disease is not only improved for some time, but the local infection is limited. 6. Tuberculosis of the intestines is apparently also mitigated by sodium cinnamate. 7. Advanced forms of the disease do not respond to this treatment, but even in these cases the patient feels better and the night-sweats stop. The author, by the suggestion of Prof. Shapiro, has experimented with this drug in 8 cases of pulmonary tuberculosis, with results fully conforming to the above conclusions. Nearly all the patients gained in weight. The bacilli for a time disappeared from the sputum, reappearing in far lesser numbers. The sputum changed from purulent to mucous, and the cough diminished. All the patients remained, during the treatment, at their daily vocations, not changing their mode of life. The treatment was administered twice a week. The injection was made into the cellular tissue of the back, between the shoulder-blades. The initial dose was 1 division of a Pravaz syringe, gradually raised to 6. Distilled water was used in making the solution, and other antiseptic precautions rigidly observed. A. R.

The Use of Morphia in Cardiac Disease. Toogood (*Lancet,* Nov. 26, 1898) has found that morphia is a very useful drug in certain forms of heart disease, although most authors have opposed it; he is not able to explain it physiologically, but clinically, in cases where the stomach has been disturbed (principally by the continued use of drugs), with pain over the pericardium, a hypodermic injection of morphia will be found to give great relief to the suffering and be of great use toward restoring compensation. He even administers it in cases where the urine is albuminous, with gratifying results; the amount of albumin diminishing, with the quantity of urine increasing. He explains the good effects by its sedative action on the vascular system (in large doses), thus restoring it.

Protargol in the Treatment of Blepharitis. Moneson (*Gaz. Mèd. Belge*) believes it valuable in this disease, being both antiseptic, astringent and somewhat caustic; he uses it sometimes as a wash, 20% strength, other times as an ointment, 5%. It should be applied about twice daily, and from day to day all wild hairs should be removed, when another application should be made.

Argyrosis of the Conjunctiva the Result of Protargol. Denig (*The Times and Register*) reports a case, for which he ordered a 5% solution of this drug. The patient continued to use it for some months without consulting him, and, when he returned, the fornices of the conjunctiva were quite well colored.

Acetanilid Poisoning. Keller (*Phila. Med. Jour.,* Feb. 4, 1899, Vol. III., No. 5) reports a case of a child, 3 years, given as much of the drug as would cover a ten-cent piece. Two hours later, his face was dusky, tongue and mucous membrane were blue, skin cold, no sweating, pulse 140, small and soft, tendency to sleep; urine voided was brownish. Stomach was

washed out, hot applications to the surface of the body, $\frac{1}{100}$ of strychnin hypodermically, a ℥i. of whiskey in hot water every 15 minutes by the mouth, and a ½ pt. of hot salt solution per rectum. Under this treatment he returned rapidly to his normal condition.

Some Further Notes on the Use of Bromid of Strontium in Epilepsy. Roche (*Indian Med. Rec.*, Dec. 1, 1898) corroborates his writings of 1894 and 1896 in his opinion of the use of strontium bromid in epilepsy, and quotes Dr. Dixon Mann (*Manual of Medical Jurisprudence*) as to its being less poisonous than the potassium salts. He has taken 33 daily for weeks without any unpleasant effects. In administering it to patients, he usually gives a ℥ss night and morning, in some bitters, and, if the patient has any forewarning of the attack, 30 grs. are to be administered immediately, and repeated every hour, if necessary. Strict attention is paid to diet; the patient abstaining from all indigestible food, and in the first stages only partaking of fish and vegetables.

Veratrum Viride in Puerperal Eclampsia. Coston (*The Virginia Med. Semi-Monthly*, Jan., 1899), in contradiction to Potter and others, does not believe that this drug is dangerous, when administered in eclampsia, but claims it is one of the most useful when employed in large doses; the only guide being the pulse, which must be brought down and kept below 60. He has used 32 in 12 hours and ℥ss in 24. The best method being hypodermically, as these cases usually need prompt and efficient attention. His conclusions are: 1. That veratrum viride is a perfectly safe remedy; even when used in extra large doses, no danger need be feared, so long as the patient is kept in the recumbent posture. 2. It is almost a specific when used early in the case for all cases of puerperal eclampsia. 3. Those who inveigh against it have either not used it at all or have used it too sparingly. 4. Use the pulse as a guide, and give the medicine in 10 or 20-drop doses hypodermically every 30 minutes until the pulse is reduced to 60 per minute, and continue the remedy in smaller doses at longer intervals until coma disappears entirely.

Death Resulting from a Patent Medicine. The *Pharmaceutical Journal* reports the death of an infant to whom the father gave 3 drops of "Bateman's Pectoral Drops" to relieve flatulence. An analysis of the nostrum revealed a large proportion of opium.

Congenital Absence of the Glans Penis. Atkinson reports, in the *New York Medical Journal*, a case of entire absence of the glans, while all other parts of the organ were normal. The man sought medical advice on account of his inability to pass a full stream of urine, and also because he did not enjoy sexual congress as he thought other men do.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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Trachoma: Original Investigations on its Etiologic Organism. I. The Organism as Seen in the Tissues and Secretions. II. As Seen in the Cultures. III. Successful Inoculation. IV. Toxins and Antitoxins. Snydacker (*Jour. Amer. Med. Assoc.*, Feb. 4, 1899) presents a most interesting and complete article treating of the organisms found in trachoma. He has obtained the organism in pure culture and has produced the disease in the human conjunctiva, from which he has again obtained the organism. The organism resembles, but is easily differentiated from, the pneumococcus; the trachoma diplococcus is smaller, has slight motility, with different culture peculiarities and pathogenesis. Snydacker's description of the organism is as follows: "*Origin.*—Unknown; seems to occur most frequently in malarial districts. *Form.*—Round diplococci, which in the tissues and first bouillon culture are enveloped in a gelatinous capsule. In the tissues they lie in small groups, each organism separate from the others. In bouillon they usually are seen as isolated diplococci; at times they are seen in small clusters or short chains, though the clusters and chains are always composed of diplococci. Often the diplococcus is seen turned on end, so that only a single coccus appears; in this position it is possible to see the capsule especially well marked. On solid culture media they simulate staphylococci; on gelatin they show an intermediate form. *Motility.*—In the hanging drop the organisms exhibit a slight degree of motility. *Vitality.*—Cultures die in bouillon in about two weeks; on agar, they live for months. *Anilin stains.*—Organism stains well with ordinary anilin stains; also by Gram's method. Capsule does not stain, but septum between cocci seems at times to have an affinity for stains, especially for methylene blue, causing the organism often to resemble a bacillus. *Growth.*—Grows rapidly in incubator, more slowly at room temperature. Bouillon becomes turbid in 36 hours. Abundant growth on serum in 48 hours. Grows somewhat slowly on agar, especially at room temperature. *On serum:* White, moist, membranous-like streak with a scalloped edge along line of inoculation. Edge is white, the center yellowish. *On agar:* Resembles somewhat the growth on serum; the edge exhibits the same scalloping. The growth on agar is more raised than that on serum. The difference in color between the center and the borders of the growth is even more marked; the center is distinctly yellow, while the borders are milk white. *In bouillon:* At the end of 10 days, white, sand-like deposit settles at bottom of tube.

In gelatin: Growth somewhat funnel-shaped. White, wavy, thread-like growth along the stab, consisting of small, agglutinated globules. Grows somewhat heavier toward the surface, and on the surface forms a white membranous growth which shows the same peculiar scalloping of the edges, as the growth on serum. The gelatin liquefies very slowly on the surface, but not along the stab. *Oxygen requirements.*—Facultative aerobic. *Odor.*—After developing one week, on any of the culture media, and especially in bouillon culture, it has a pronounced urinous odor, which, as the time goes on, becomes very offensive."

Infective Sarcomata in Dogs. Smith and Washbourne (*Brit. Med. Jour.*, Dec. 17, 1898) continue the report of their research on this interesting subject, an earlier paper having appeared in the *Journal of Pathology and Bacteriology*, Jan., 1898. After abstracting the literature upon the subject, and giving their method of inoculation and its results, and describing the course taken by the tumors after subcutaneous inoculations, with a full report of the results of their experiments and their examinations, the authors have come to the following conclusions: "1. The tumors in question are infective, round-celled sarcomata occurring in dogs. 2. The tumors can be transplanted from the genitals, where they naturally occur, to the subcutaneous tissue of other dogs. 3. The tumors can be transplanted from subcutaneous tissue to subcutaneous tissue through a series of dogs. 4. The tumors, after reaching the maximum of growth, may disappear spontaneously, with or without ulceration. 5. The tumors may continue to increase, and may cause death by secondary deposits forming in the viscera. 6. If the tumor should disappear, the animal is then immune to subsequent inoculation."[1]

Malaria: Immunity: Absence of Negro Immunity: Variety. Smith (*Brit. Med. Jour.*, Dec. 17, 1898) discusses some of the features of immunity to malaria as observed in Sierra Leone. The negro natives of Sierra Leone suffer from a mild, rarely fatal form of malaria. The negro soldiers coming from Jamaica, Barbados, St. Lucia, etc., immune to the malaria of their respective countries, suffer from the Sierra Leone form; the attacks require careful treatment, in spite of which they are not uncommonly fatal. The difference in the severity of the affections is well shown where the native and the imported soldier are kept side by side, the latter alone suffers. From this and similar facts the writer is inclined to believe that: (1) There may be more than one form of immunity to malaria, and that the immunity acquired in one country does not protect under different climatic conditions. (2) There may be more than one type of the malarial organism; immunity against one being inefficient against another. As we have been believing that the negro is strangely immune to all forms of malaria, it would appear, from the data submitted by Capt. Smith, that we must revise our existing views.

[1] Lazarus-Barlow (A Manual of General Pathology, p. 662) is not convinced that the tumors are sarcomata, but regards them as special forms of granulation tissue, not histologically different from the sarcoma.

On the Relations which Exist between Human Tuberculosis and Bovine Tuberculosis. (*The Jour. of Compar. Med. and Veter. Arch.*, Jan., 1899.) The paper is a translation by Ravenel of an article by Nocard (*Annals of the Pasteur Institute*, Sept., 1898). Admitting the identity of the various forms of tuberculosis as observed in mammifers, the author proceeds to discuss the relation between avian tuberculosis and the foregoing. He briefly reviews the literature on the subject and gives the results of his effort to convert the bacillus of Koch into an organism having the cultural peculiarities of the bacillus of avian tuberculosis. Sterilized collodion sacks are filled with bouillon and seeded with the tubercle bacillus. After sealing, the sack is introduced into the peritoneal cavity of a chicken, where it is permitted to remain for a minimum period of four months—a longer time is preferred. At the end of this time, the sack is collapsed, and contains but a small quantity of slime-like material, in which are bacilli, usually alive. At first, cultures made from these sacks grow slowly, later they take on all the characters of the avian type of the organism. Guinea pigs, inoculated with this modified organism, react as to the organism of avian tuberculosis. The author believes that he has determined "that it is possible to give the bacillus of human tuberculosis the biological characters and the virulence which characterize the bacillus of avian tuberculosis."

CLIMATOLOGY AND HYGIENE.

UNDER THE CHARGE OF

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Climate of Colorado in Diseases of Children. Gardiner (*Jour. of the Amer. Med. Assoc.*, Jan. 28, 1899) has made an investigation, with the following results: In all diseases of the gastro-intestinal tract, characterized by diarrhea, such as enterocolitis, cholera infantum, dysentery, simple diarrhea, etc., the testimony was overwhelmingly in favor of the climate of Colorado exerting a specific effect, both in rendering such diseases much less frequent and in diminishing their virulence when they did occur, the fatality in such cases in infants and children being small in Colorado as compared with states with less favorable climatic conditions. This unusually small number of diarrheal diseases, and the low mortality from the same in Colorado is, however, not at all surprising, when we consider the etiology of such diseases. Their time of greatest prevalence and destructive effects upon infants is during the summer months, when continual heat is enervating, and fermentive changes in all foods are apt to be active. The heat

in Colorado is never the humid, relaxing, long-continued physical depressor found in many of our large cities, and even rural districts, elsewhere. The sun is hot, withering and fierce, at times, but in the shade, and at night, the air is cool and comfortable. The milk-supply, due to non-septic dry air, moderate thermometric range, and, in most cases, better physical condition of cows, insures a better nutriment in bottle-fed babies; while the mother who nurses her baby has also this great advantage of environment, and gives to her child the vigor imparted by air and sunshine.

Pulmonary Tuberculosis among the Insane at St. Peter, Minnesota. Tomlinson (*Proceed. of the Amer. Psychol. Assoc.*, 1898) has made post-mortem examination of 72 patients, and, of these, 24 were cases of phthisis. In none of the cases studied was there complete freedom from lung involvement, while in some of the cases where death was due to nephritis, the progress of degeneration was as great as in the well-defined cases of pulmonary tuberculosis. In the autumn of 1896, there was a marked increase in the number of cases of tuberculosis in the hospital, and the illness of the herdsman employed by the institution and the death of a patient employed in the cow barn led to the examination of the herd, with the result of finding one-half of the animals infected with tuberculosis. It appears, however, that the increase in the number of deaths from this cause went on, "in spite of the fact that all the milk from the infected and suspicious cows was boiled before using, and the unsound cattle isolated." Why the cattle were not promptly killed is not explained. Phthisis among the insane is, in old institutions like the hospital at St. Peter, a proportionately more common cause of death than in general practice outside of the large cities, the death-rate for the last year recorded being 46% of the number of deaths for the year. The disease is most common among primary defectives of the connective tissue type, to which most epileptics and cases of so-called adolescent insanity belong. The nationality of those dying of phthisis was: Scandinavian, 17; Irish, 13; German, 10; American, 7; French, 2; Polish, 1. Dr. Tomlinson attributes the nephritis and lung disease to overfeeding, combined with enforced idleness, overcrowding and poor ventilation.

On the Question of Disinfection of Dwellings. Dserjgowsky (*Vratch,* Vol. XX., No. 1) points out the following requirements which a disinfectant must meet in order to be useful: 1. It must act with certainty, destroying pathogenic bacteria under all circumstances. 2. Its action should be least poisonous to men, and, if it does possess any deleterious effects, they should permit a rapid and easy removal after disinfection. 3. It must have no injurious effect on furniture or other articles. 4. It should be rapid in its action. 5. It must be simple, requiring no special skill for its employment. 6. It must be cheap. Hardly a single disinfectant at present employed meets all these indications. The best of them is undoubtedly formaldehyd, but even this is not as effective as was at first expected. The author has performed a large number of experiments at the Institute of Experimental Medicine, and come to the conclusion that the Schlossmann-Lingner

method of using formaldehyd is the best. He also established the fact that the addition of glycerin is very useful, inasmuch as it prevents the formation of trioxymetylene and the consequent loss of formalin. It also retains the vapor much longer. On the other hand, it is somewhat objectionable on account of the changes it produces on the colors of cheap fabrics and the longer retention of the odor of formalin in the room. The influence of this method on domestic parasites is practically nil. Roaches perish only when directly exposed to the spray of glycoformalin, while bed-bugs are not at all affected. The author finally concludes that we do not as yet possess an all-around method applicable in all cases, and, therefore, disinfection should be done by a specialist, who would employ the various methods to suit the conditions present. This should be under the control of the Board of Health, and the people fully recompensed for any unavoidable damage inflicted on their furniture, etc., by the disinfection, as is done in the case of diseased cattle. It is also desirable that uniform methods of procedure be established, thus avoiding contradictory conclusions arrived at by different observers. A. R.

SURGERY.

UNDER THE CHARGE OF
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Twenty-three Splenectomies. Jonnesco (*Gaz. des Hop.,* 1898), since 1896, has performed this operation 23 times—once for an enormous hydatid cyst, and 22 times for malarial hypertrophy. The patients were between 12 and 63 years of age. In 4 cases the general condition was good; there was marked anemia in 5. In 5 there was marked cachexia, with edema of the lower extremities, and a large decrease in the number of red blood corpuscles. One case died as a result of the operation, while 7 others succumbed from the poorness of their condition from complications not dependent upon the spleen. The operation always had a curative effect: the cachexia disappeared, the red corpuscles increased, and the malarial intoxication disappeared. The urinary toxic symptoms also always decreased. These excellent operative results confirm the author in the opinion which he holds, in common with Saveran, that the spleen, instead of being an organ that protects against malaria, is the harbor in which the malarial plasmodium congregates, and from which it is discharged into the system. Hence, the removal of the spleen in malarial subjects is indicated where it is enlarged, as it suppresses the greatest source of infection and cures the patient. He therefore advises the operation before adhesions have formed or the cachexia has rendered the subsequent operation more grave. Leukemia is the sole contraindication to this operation.

Removal of a Calculus from the Common Bile Duct Two Inches Long and Three and One-half Inches in Circumference without Entering the Duct. Thornton (*Lancet,* 1898) reports an interesting case in which a calculus, 2 in. long and 3½ in. in circumference, was removed from the common bile duct of a man who had suffered from frequently-recurring attacks of obstruction without the passage of calculi. A smaller stone was found in the bladder and removed. It was impossible to dislodge the large stone, so the duct was incised and the stone removed. No attempt was made to suture the wound in the duct. A drainage tube was carried down by it to the depths of the abdominal pouch and packing placed to cut off the rest of the peritoneal cavity. The flow of bile ceased on the third day, and the wound closed by first intention. For the first three days there were large quantities of bile discharged, 2 or 3 pts. daily. The patient made a perfect recovery, and is free from all symptoms, either of jaundice or colic.

The Sterilization of Catgut by Dry Heat. Dauber (*Lancet,* 1898) describes as follows the method employed by Tscherning, of Copenhagen, for the sterilization of catgut, and says that he has found it very satisfactory in his own cases: The ordinary commercial catgut is placed on trays in the sterilizer, between sheets of cellulose paper. It is then heated for 6 hours consecutively; for the first hour at a temperature of 60° C., for the second and third hours at 100° C., and for the fourth, fifth and sixth hours at 140° C. It is then removed and placed in double-sealed envelopes of cellulose paper. It is then subjected, for another two hours, to a temperature of 140° C. The envelopes are placed in racks in the sterilizer, and each is labeled with the number of the size it contains. The ligatures are kept and transported in these envelopes till the time of the operation. This dry catgut is readily handled, has all the advantages of flexibility and more rapid absorption, without any of the disadvantages of the other kinds. The method of raising the temperature by slow degrees prevents the catgut becoming brittle, the grease and oil in the catgut being driven off gradually at the lower temperatures.

Silver and Silver Salts in Surgery, with Special Relation to Wound Surgery. Bainbridge (*Med. Rec.,* 1898), from personal observation of the results obtained by Credé in the use of the silver salts as antiseptics, reports the following favorable points: (*a*) No evidence of suture irritation. (*b*) No stitch abscesses. (*c*) No area of dermatitis about the wound, as is sometimes seen with iodoform. (*d*) No systemic effect, even when the amount of antiseptic was large. In addition, the author gives these practical suggestions regarding its employment: (1) A small quantity of the citrate is all that is required. This is important, as the salts are rather expensive. (2) Solutions must be made fresh. They are chemically changed if exposed to light for some time. (3) One should be sure of his preparations. (4) No corrosion of instruments need be feared. (5) Stains produced on towels, etc., can be removed by washing, provided they have not been exposed to the light for a long period of time. The internal adminis-

tration of the salts, or their use hypodermically, in the treatment of systemic infection, is a fruitful field for investigation, from which brilliant results may be expected.

The Importance of Rectal Examination in Doubtful Cases of Appendicitis. Delatour (*Brooklyn Med. Jour.,* 1898) points out the fact that the appendiceal abscess may lie within the pelvis and entirely evade the superficial examination of the iliac fossa. In these cases, the point of tenderness is frequently absent, the rigidity of the rectus muscle absent, or else present to a moderate degree on both sides; no tumor is appreciable, and still the pain and the temperature with the rapid pulse point to an active process going on in the region of the appendix. The author illustrates his point by a series of very instructive cases, and shows that a rectal examination will often disclose an appendiceal abscess that can be detected in no other way. His cases also illustrate the value of operation where no tumor can be detected in the iliac region.

Urethritis in Male Children. Abt (*Medicine,* 1898) reports a number of instances of simple and specific urethritis, and shows that the non-specific variety is practically self-limited and has a natural tendency to recovery without any sequelae. On the other hand, the specific variety has all the characteristics seen in the adult and is liable to all its complications, with the exception of gonorrheal arthritis, which is, however, frequently seen after vulvo-vaginitis. The diagnosis is made by the presence of the gonococci and the longer duration of the disease. Infection of the anus and rectum may occur if care is not exercised.

LARYNGOLOGY AND RHINOLOGY.

UNDER THE CHARGE OF

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ASSISTED BY

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Serumtherapy in Ozena. (*Serumpathie der Ozena, Frankenberger, klin. Therap. Wochensch.*, Nos. 39-40, 1898.) The author has treated 3 cases with injection of anti-diphtheritic serum after the method of Belfanti and Della Vedora. The first patient received, from Oct. 9, 1897, to Feb. 14, 1898, 30 injections, representing 26,600 units. These injections did not arrest the crust formation, but after Jan. 11, 1898, the patient could not take the injection every two days, and once was obliged to rest four days without treatment. The crusts formed in good quantity in the nose, but gave off no odor; the membrane appeared redder and more swollen. A

similar result was noted two and a half months after treatment closed. The second patient received, from Oct. 12 to Dec. 14, 1897, 18 injections, 14,200 units. During the treatment the nose was douched twice a week. The nasal condition improved to the extent of diminution of crust formation and entire freedom from any odor. The patient was seen five months after treatment was stopped. Neither crusts nor odor were detectible; the membrane was very red, entirely normal in appearance. Similar results were obtained in the third case, which is still under treatment, but has received 13 injections, 13,000 units. With no desire to attribute a specific value to these injections, it must be admitted that their action on the mucous membrane was very favorable, both in modifying the secretion and in lessening its tendency to dessication, and that although crusts are formed, they are freed from the specific odor of ozena. Despite these results the author does not believe that the favorable action of these injections proves the parasital origin of ozena, nor that this affection is caused by the bacillus of Löffler. In one case the author has obtained results exactly similar to those derived from serumtherapy by injections of a saline solution. The patient, who had been affected with ozena for eight years, received, in all, 15 injections of the saline solution, which were followed by considerable improvement. If this last observation can be confirmed by others of a similar nature, our conception of the serumtherapy treatment will have to undergo considerable modification, in the sense that the conclusion would have to be formed that in ozena, as in other infectious maladies, the serum solutions act not on the microbe—the cause of the disease—but on the human organism—its nervous system—by stimulating its power of resistance. (Abstracted by S. Jankelevitch, in *Rev. Hebdom. de Laryngol, etc.*, Dec. 17, 1898.)

A Case of Calculus of the Uvula. Goodale (*Bost. Med. and Surg. Jour.*, Vol. CXXXIX., No. 23) reports the case of a child, 2 months of age, who had choking and obstruction to breathing in the prone position. A calculus, 4 mm. in diameter, was detected on the anterior aspect of the uvula, midway between the tip and junction with the soft palate. It was enucleated with cutting forceps, crushed, and found to consist of amorphous particles, with fat crystals, fat drops, and fatty degenerated epithelium. The author supposes that "the mass was situated in a dilated mucous gland and had arisen through obstruction of the duct of the gland." He found no other case in literature, but discovered two cases of calculus of the soft palate, one reported by Anselmier, the other by C. A. Parker.

Chronic Urticaria of the Larynx. Freudenthal (*New York Med. Jour.*, Dec. 31, 1898) reports a case in which an examination of the patient, complaining of vague symptoms in his throat, as though there were something in his larynx (right side), which he felt like pulling out, showed a lingual tonsil somewhat enlarged, a diffuse redness of the laryngeal surface of the epiglottis, with a slightly edematous elevation on its right side. The epiglottic picture varied, at one time showing one or more herpetiform prominences with edematous surroundings, at another a deep red color, and, again, perfectly pale. This laryngeal syndrome, with recurrent general

urticaria associated with indigestion, established the diagnosis of chronic laryngeal urticaria. Diet of the plainest character and country air improved the underlying cause and the laryngeal symptoms. [Digestive disturbances are usually the cause of such conditions, either acute or chronic.—Ed.]

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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Cataracts of Rapid Formation. Dujardin (*Jour. des Sciences Méd. de Lille,* Oct. 22, 1898) reports a case of keratitis with hypopyon in which, without the slightest history of traumatism, the lens became suddenly cataractous, reaching total opacity in three weeks. The patient had not sustained injury, and had refused all surgical intervention, such as paracentesis or Saemisch incision. The lens was successfully removed, although the corneal disease left leucomata. The cataract was likely due to spontaneous perforation of the corneal ulcer. The author recalls cases of almost instantaneous maturation of senile cataract, reported by Panas, Delbis, and Fuchs. Scheffels reported a case of double diabetic cataract, maturing in both eyes within 9 days. Certain it is that diabetic cataracts are the quickest to mature.

Large Foreign Bodies in the Conjunctival Cul-de-Sac. Thilliez (*Jour. des Sciences méd. de Lille,* Dec. 17, 1898) reports a case in which a good-sized hazel-nut was retained 6 weeks in the right inferior cul-de-sac. In reviewing the literature, we find numerous interesting cases on record. Mackenzie and de Wecker mention instances in which dead flies have been retained as long as 8 days. Yvert reported a case of a smithy who retained for some time a piece of coal as large as a pea. Dujardin mentions a similar case. Remy mentions a case in which an oat-grain remained in the lower conjunctival sac for 5 months, and, when removed, was in a state of germination, having a sprout 5 cm. long. In the International Medical Magazine, March, 1898, there is mentioned a case reported by Croskey in which a Russian carried, for 8 months, in his upper conjunctival cul-de-sac, a piece of wood, 18 mm. long, 6 mm. wide, and 3 mm. thick.

The Etiology of Trachoma. Snydacker (*Jour. of the Amer. Med. Assoc.*, Feb. 4, 1899) has published the results of his recent original investigations on the etiologic organism of trachoma: 1. As seen in the tissues and secretions. 2. As seen in cultures. 3. Successful inoculation. 4. Toxins and antitoxins. He has apparently adhered to the regular *modus operandi,* and his findings fulfil the classic requirements for the definite associa-

tion of a micro-organism with an infectious or contagious disease. Snydacker shows an extensive knowledge of all previous work in this line, and claims that many of the results are confirmative of his findings. The trachoma organism, as found by him, is a tiny, capsulated diplococcus which is present in the trachoma nodule, which is at times, though not frequently, present in the secretions. It changes its form and size on different culture media. It is obtained in cultures with great difficulty, it being necessary, on an average, to inoculate nine bouillon tubes before a culture is secured. It dies in liquid culture-media in about two weeks, but lives for months on solid media. The organism stains well with ordinary anilin stains; also by the Gram method. The capsule does not stain, but the septum between the cocci seems at times to have an affinity for stains, especially for methylene blue, causing the organism often to resemble a bacillus. It is facultative aerobic, and after one week it produces a urinous odor. Snydacker has hopes of the discovery of an efficient antitoxin, and promises a future paper on his work in this direction. Claims of the discovery of the specific organism of trachoma have been so frequent that the whole profession has become skeptical, and, for this reason, full recognition is never accorded to such work. Snydacker has certainly gone to a lot of painstaking labor, and is thoroughly scientific, and clinical laboratories everywhere should immediately take measures to prove or disprove his claims. We acknowledge a full growth of skepticism in regard to the efficiency of any antitoxin over a 50% solution of boroglycerid, applied locally. We think future treatment will continue local.

Ocular Complications of Puberty in Females. Fachatte (*Paris Thesis,* 1898) reports as consecutive to the first menstruation, interstitial keratitis, iritis, neuritis, choroidal and retinal hemorrhages, exudative choroiditis, irido-choroiditis, and retinal detachment. He also mentions embolism from a menstrual cause, and hemorrhage into the anterior chamber cured by the first menstruation. Fachatte has collected numerous instances in literature, and verifies his findings by extensive bibliographic references. The paper is a compilation rather than a clinical study.

Prognostic Significance of Retinal Hemorrhages. Ray (*Amer. Prac. and News,* Dec. 15, 1898) makes some desultory remarks upon retinal hemorrhages in certain blood conditions, in which he recalls some trite but important opinions. The late Dr. Agnew, of New York, once told the writer that whenever he encountered a case of simple retinal hemorrhage in a person past 60 years, he expected death from cerebral hemorrhage within three years. S. Mackenzie says that the corpuscular weakness of the blood must fall below 50% before there is a tendency to anemic hemorrhages of the retina. Hence, the hemorrhage is a sign of serious anemia, often before a blood-count is made. Ray concludes by saying that the prognosis in retinal hemorrhages in the young is usually favorable, but when this condition is found after 50 years of age, the outlook becomes more serious, even when organic kidney disease can be excluded. Hutchinson states that in such cases there is an arterio-sclerosis of the retinal blood-vessels dependent on

gout. Bull, Nettleship, and others take a similar view. Dr. Hasket Derby has recently reported a series of cases of retinal apoplexy in which he has followed the cases for some time, and he states that the symptom is an ominous one; only 5 of 31 cases were still living, most of the cases dying suddenly from apoplexy or heart disease.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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Treatment of Gonorrhea. Janet (*Klin.-therap. Wochensch.,* No. 51, 1898) frequently makes use of salves and soluble bougies in the treatment of gonorrhea. The salves are recommended in the acute inflammatory conditions, and are to be applied to the urethral mucous membrane by means of sounds. The combination commonly used is as follows:

℞ Sodii bor.	grs. vii.
Zinci oxid	ʒss.
Lanolin	ʒss.
Glycerin	fʒjss.

In chronic inflammations he makes use of the above combination, to which is added, nitrate of silver, ½%, or salicylic acid ½ to 1%. He occasionally employs urethral suppositories, composed of cocoa-butter as a base, and containing either 25% iodoform, or 1% of silver nitrate. These suppositories are only to be introduced as far as the bulbous urethra. He claims for this method of treatment the minimum amount of local irritation and the deeper penetration into all the folds and follicles of the urethral mucous membrane.

Castration and Resection of the Vas for Hypertrophy of the Prostate. Loumeau (*Annales de la Policlinique de Bordeaux,* Jan., 1899) reports 8 cases of hypertrophy of the prostate, complicated by incomplete retention, in which a double vasectomy was performed. According to the author, the results were absolutely negative, when the cases were again examined, between the 3d and the 6th month after operation. These results are in accord with the report of the Congress of Urology. Castration, according to the author, is capable of bringing about most excellent results in the majority of cases.

Reinfection of Syphilis. Borowsky (*Gaz. Méd. Belge,* Dec., 1898) reports the case of an officer who was treated for active secondary syphilis in

1889. In 1897 the author was again consulted by the same officer in reference to a small ulcer on the penis, which had appeared two weeks after coitus. A short time after his admission to the hospital, a roseola, followed by papules, appeared on his body. The author is somewhat in doubt as to the nature of this second eruption; while acknowledging the possibility of a relapse, he assumed, because of the long interval of freedom from his first attack, that the penile ulcers were probably true chancres.

Chronic Catarrhal Prostatitis. Christian (*Jour. of Cut. and Gen.-Urin. Dis.*, Jan., 1899) considers the effect of bicycle-riding upon chronic inflammation of the prostate. He is of the opinion that the saddle of the ordinary bicycle, by pressure, does but little harm, either to the normal prostate, or when the seat of a chronic inflammation. When using the most improperly constructed saddle, the pressure is expended upon the bulbomembranous junction, rather than upon the prostate.

Combination of Syphilis and Epithelioma of the Tongue. Kenny (*The Australas. Med. Gaz.*, Dec., 1898) chronicles the unusual combination of syphilis and epithelioma of the tongue in a male patient of 49 years. After the syphilitic lesion had disappeared, under the use of appropriate remedies, an epithelioma made its appearance, which was excised. The diagnosis was confirmed by microscopic examination.

General Staphylococcus Infection Originating in the Urethra. Rendu (*Gaz. des Hop.*, Jan., 1899) reports the case of a man, aged 26, admitted to the Necker Hospital for retention of urine. He had been unable to urinate for 10 days, and exhibited considerable constitutional irritation, fever, etc. A few hours after admission, the symptoms became very grave; the temperature reached $105\frac{4}{5}$, headache was agonizing, and the patient was somewhat delirious. From the severe head symptoms, a meningitis was diagnosed as an independent lesion. Under appropriate treatment, the patient was made fairly comfortable until four days later, when a circumscribed gangrenous area appeared over the sacrum; still two days later, the testicle became red, swollen, and tender. From May 5th to May 10th, corresponding to the 5th and 10th days of the infection, the symptoms were stationary, the temperature fluctuating between $103\frac{2}{5}$ and $104\frac{4}{5}$. On May 12th, a large crop of furuncles appeared on the legs and on the shoulders. On May 18th, the author found, for the first time, an endocardial murmur, and the urine was loaded with albumin. From May 18th to June 1st, the patient had repeated attacks of hematuria. In all, 39 abscesses were opened, including a suppurating knee-joint. The patient was discharged, cured, Oct. 1st.

Gonorrheal Arthritis. Gaither (*Medical News*, Jan. 21, 1899) calls attention to the discovery, by Höck and Neisser, of the presence of the gonococcus in effusions drawn from joints affected with gonorrheal arthritis, and to the demonstration of its presence in the blood stream by Thayer and Bloomer. Gonorrheal arthritis is divided into the serous, sero-fibrinous, sero-purulent, and purulent forms. The knee-joint is the one most com-

monly involved; the next in order are the ankle, shoulder and hand. The disease is present in 2 per cent. of all cases of gonorrhea in males and rarely occurs in females. It usually develops between the third and fifth weeks of the gonorrheal attack; sometimes it develops within a few days, and, again, months afterward, as the result of chronic posterior urethritis. There is usually a rise in temperature in the acute forms to 104° F. The effusion occurs rapidly, the tension producing aggravating pain. The temperature drops to nearly normal in a few days. The endocardium and pericardium are not involved as frequently as in articular rheumatism. The urethral discharge is not influenced by the appearance of the joint complication. In chronic gonorrheal arthritis, the invasion may be slow and constitutional symptoms slight. Absorption, as a rule, is slow, and deformity may result from the adhesions. In severe cases the synovial membrane may be thickened or its surface become granular and puffy. Erosion of the articulating cartilages and destruction of the bone substance and the periosteum may completely destroy the joint. The bursas may undergo similar changes to those which take place in the synovial membrane of the joint. Treatment is unsatisfactory; quinin in doses of 5 to 10 gr., t.i.d., and biniodid of mercury, $\frac{1}{10}$ gr., are useful. Copaiba in large doses, and salol, together with the application of leeches to relieve the swelling and pain, and the use of the Paquelin cautery, applied daily, are of benefit in some cases. When the case is sub-acute or chronic, with delayed resolution and impairment of motion, massage, and particularly forcible gradual flexion of the joints, hastens the return of voluntary motion. Force should only be used in flexion. If adhesions keep the joint in a position of flexion, the tendons should be severed before forcible extension is attempted. The patient should be warned against the great danger of permanent disability in the event of another attack of gonorrheal arthritis. Two cases are reported, the first in a man aged 25. The joints of the second and third fingers were involved. The patient was given capsules containing 10 gr. of copaiba, 5 of cubebs, 3 of salol, and 1 of pepsin. Hot lead and opium lotions were applied locally every two hours. The pain practically disappeared on the sixth day. The second case occurred in a male aged 24. He developed arthritis of the right knee-joint following gonorrhea. The same medication was resorted to as in the former one, with the addition of urethral irrigation of a solution of the bichlorid of mercury, 1 to 40,000. The joint was wrapped in cotton, and hot lead and opium lotion applied every two hours. In convalescence the knee-joint was stiff and could only be slightly flexed. Massage was given to the knee every day with gentle force. Motion gradually returned. The capsules were continued for about three weeks. At the end of four weeks the patient was practically well. The improvement was attributed more especially to the copaiba. LAB. J. L.

Treatment of Hematemesis. Professor Mann recommends physiologic rest in the treatment of hematemesis due to gastric ulcer. No food should be given by the mouth, not even ice or iced water. Small hypodermics of morphine (not above $\frac{1}{4}$ gr.) are of service. The only drug for arresting hemorrhage in which he has any faith is turpentine.

GYNECOLOGY.

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Treatment of Complete Rupture of the Perineum. Kelly (*Maryland Med. Jour.*, Jan. 21, 1899) proposes to treat complete laceration of the perineum by a deliberate dissection and freeing of the sphincter ends, drawing them out about 1½ cm. from the tissues, cutting off the scarred ends and effecting a direct union of the freshened ones by two or three buried catgut sutures. In addition to these buried sutures, a splinting suture of silkworm gut is passed through the middle of the sphincter, near the edges of the wound, and on up through the septum, splinting the ends together and taking the tension off the catgut. Great care must be taken not to leave any dead spores in closing the remainder of the wound in the usual way, in order to avoid all risk of infecting the buried sutures.

Uterine Perforation During Curettage. Elder (*Med. Press*, Jan., 1899) relates two cases in which the uterus was perforated during dilatation with Hégar graduated dilators, without any serious consequences. The risk of this accident is much diminished by a preliminary bimanual examination of the parts, to ascertain the condition of the appendages and the direction of the uterine body. It is in those cases in which the uterine walls are softened by recent abortions or labors at term, by sepsis, by cancerous, sarcomatous, and tuberculous degeneration—conditions most exposed to injury from instruments—that digital exploration is of service, whether for the removal of decidual remains or the clearing up of diagnostic doubts. [This accident is very likely to occur in acute flexions. Even with the most scrupulous care the stretching of the canal and the impinging of the point of the instrument against the thinned convex wall, will frequently result in rupture. The accident is generally not attended with any untoward symptoms.—Ed.]

Effect of Thyroid Extract on Uterine Fibroids. Polk (*Med. News*, Jan. 14, 1899) reports 10 cases of uterine fibroids in which thyroid extract was administered. The net result in 9 cases has been improvement, the greatest existing in those who took the treatment longest. Its manifestations were: (*a*) Control of the menstrual flow; (*b*) arrest of the growth, and, in some cases, diminution of the size of the tumor, and, apparently, softening of it; (*c*) disappearance of pain and diminution of tenderness in the growth, and also of the sense of abdominal and pelvic disten-

sion; (*d*) improved general nutrition. In one case the medicine could not be employed because of gastric disturbance. In every instance tachycardia was the most common drawback; next, restlessness and sleeplessness, when the drug was taken at bedtime; and, lastly, indigestion. [My experience with this drug is that, in the great majority of cases, the restlessness and nervous excitement are so great that the drug cannot be continued sufficiently long to serve a useful purpose.—Ed.]

Influence of Castration upon the Human Organism. Pfister (*Bulletin Méd. de Paris,* Dec. 15, 1898) gives the following figures, the observations being made upon 116 cases: The menopause was produced in 94.8% of these cases, but 30% preserved the menstrual molimina. The sexual appetite has persisted in 26%, diminished in 30%, and disappeared in 43%. As to sexual pleasure, it continued to be experienced by 22.6%, with diminution for 24.4%, but 52% no longer experienced it. The uterus, as a general rule, was atrophied; the vagina and the vulva have been more rarely. There was an atrophy of the breasts in 29% of the women. The tendency to obesity was increased. The flashes of heat were usually observed after the operation, but generally disappeared spontaneously. The voice was often modified after the operation, and that for a long enough time, but rarely in a decided degree. As to the results given by the operation from the point of view of the troubles which indicated it, one counts 87 cures, 18 marked and 6 slight ameliorations.

Experiment in the Treatment of Ineradicable Cancer of the Uterus. Buist (*Scot. Med. and Surg. Jour.*, Jan., 1899) describes a case in which he ligated the uterine vessels in inoperable uterine cancer. The operation diminished for a time the size and, probably, the growth of the tumor, and it is possible that it had some influence in delaying the onset of hemorrhage. It did not prevent the ordinary issue of the disease, nor did it seem to relieve the pain.

Cancer of Neck and Bifid Uterus. Pollisson (*Soc. des Sciences Méd. de Lyon,* Dec., 1898) presented an anatomical curiosity, a bifid uterus with two cornua, and with a portion of cancerous cervix removed for cancer of uterine neck. The vaginal hysterectomy presented some operative peculiarities: the size of the operative floor, which caused a very great inclination of the clamps, which could be closed with difficulty; the difficult separation of the peritoneum from the mass, and the impossibility of reaching the posterior cul-de-sac. In fact, the two uterine bodies were covered with the peritoneum, except the posterior face, and between the uterus and rectum there existed only the cellular tissue. This woman, married, aged 50 years, had menstruated regularly; she had had 9 pregnancies, 3 to term, 2 to 8 months, and 4 miscarriages at 3 months. Before the pregnancies at term, before the miscarriages, one asked if the cornu was less susceptible of distending during pregnancy, but it could not be determined on which side the pregnancy existed. In the case of a bifid uterus, the persistence of the menstrual congestion of one cornu has been noticed during the pregnancy

of the other; so that it may be asked, Is not the persistence of menstruation during pregnancy a sign of double uterus? This woman had no appearance of menses during pregnancy, but it must be remarked that in her case the bifidity was not complete. A double uterus is very rare, and, clinically, is only exceptionally diagnosticated. Pollisson was able to make a clinical diagnosis in one case of placental retention after abortion. In making the uterine toilette, he was able to introduce the finger into the cavities in different directions. The diagnosis can be made by the alternative development of one cornu during pregnancy.

Vagino-abdominal Hysterectomy. Delagenière (*Le Progres Méd.*, Nov. 12, 1898), after describing in detail several methods of vagino-abdominal hysterectomy, says that its sequelae are the same as those of simple abdominal hysterectomy, with the addition of the special danger of infecting the serous membrane in passing from the vaginal step in the operation to the abdominal; that while it presents the advantages of facility of execution, these are outweighed by the danger of infection which the patient necessarily undergoes. Hence he proscribes it absolutely when the operation can be made complete by either the abdomen or vagina alone. Vagino-abdominal hysterectomy should be chosen only when the operation necessitates the employment of the combined routes. Uterine cancer is the only condition which fills these requirements; for he believes that in all cases of cancer there should be removed, at the same time, the uterus, the upper third of the vagina, and all the iliac ganglia.

The Choice of an Anesthetic. Dr. Silk regards special knowledge and skill in the management of the anesthetic, the duration of the operation, and the posture of the patient as important points to be considered in selecting the anesthetic. In children up to 3 years he gives chloroform, from 3 to 12 the A.C.E. mixture, from 12 to 60 ether, and for people over 60 the A.C.E. mixture. This last anesthetic is also chosen in the case of the fat and plethoric. In acute lung disease chloroform seems to answer best, but in more chronic cases he commences with the A.C.E., and gradually increases the proportion of the ether as the operation becomes prolonged. He does not like ether in cases of uncompensated heart disease, or when the arteries are atheromatous. The A.C.E. mixture is best in renal disease, in operations about the head and neck. Abdominal operations involving much shock require ether. Many of the alleged drawbacks to ether in such operations are probably more fanciful than real, and arise from the difficulties incident to the case; but these difficulties should lead the anesthetist to assist the surgeon as much as possible in these cases.

Alcohol in the Treatment of Erysipelas. Fisher applies 85 to 95 per cent. alcohol to the inflamed area by means of linen or cloth which is kept constantly moist. In the 25 cases thus treated, he found the diseased process either rapidly abated or stationary; suppuration, if it occurs at all, is limited, and gangrene never occurred. He had no deaths.

INTERNATIONAL MEDICAL MAGAZINE.

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Edited by BOARDMAN REED, M.D.

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The Medical Treatment of Appendicitis.

In the INTERNATIONAL MEDICAL MAGAZINE for March last, attention was called to a remarkable communication on the treatment of appendicitis, by Dr. H. W. Carpenter, of Oneida, N. Y. He claimed that in an experience of nearly forty years, seeing annually from five to twenty acute attacks of inflammation in the right iliac fossa, such as are now classed as appendicitis, he had had one death only, and resorted to no cutting operations, though in a few cases abscesses were opened by aspiration, followed by compression. His treatment included a sedative in the beginning when the pain was severe, together with poultices in all the cases, but in the way of internal medication his chief reliance was on small doses of bichlorid of mercury (gr. $\frac{1}{120}$ every hour), with $\frac{1}{4}$ minim of tincture of aconite every two hours. He began the treatment, in some instances, with 15 to 20 grains of calomel in one dose.

Even allowing a considerable margin for possible errors in diagnosis and for fatal cases that may have been forgotten, Dr. Carpenter's success in treating appendicitis must have been most extraordinary.

And now comes Dr. T. J. Hutton, Professor of Diseases of the Nervous System in the College of Physicians and Surgeons, Chicago, and in a vigorously worded contribution to the *Medical Record* of December 17th, reports that in one hundred cases of appendicitis, he has not found it necessary to operate even once, though himself a surgeon, and has had no deaths! His method is to give calomel and soda boldly — $2\frac{1}{2}$ to 10 grains of each every hour for three or, sometimes, even four doses, following up with a saline purge if necessary — and to apply locally cloths wrung out of boiling water. He describes a number of severe and threatening cases in which he fully expected to be obliged to operate, but the calomel pushed to purgation cured them all and usually removed the serious symptoms within a day or two. When there was fecal impaction, he preceded or accompanied the other treatment by copious enemata, continuing these till there was a complete unloading.

In this connection it may be interesting to mention briefly some similar

clinical experience in our own practice. About ten years ago we began treating, by hot flaxseed meal poultices locally, cases of acute appendicitis, and, in addition, by small doses of calomel, gr. $\frac{1}{10}$ every one or two hours, followed by salines, when necessary, to open the bowels freely. During this time none of our cases have ended fatally, and two only have been operated on. One of these might possibly have yielded to a bolder use of the calomel. The other was not seen till in a late stage. We have within the same time seen one fatal case (in Atlantic City), but this was in the charge of the patient's family physician during most of its course, and the mercurial treatment was not carried out. An operation in this case was declined when first advised, and, when done later, proved unavailing. Under the treatment by calomel and poultices, begun early, we have seen many cases recover completely within four to five days. Unfortunately, we have kept no notes of the majority of the cases seen outside of our office, but should estimate the number in ten years at not less than fifty.

Dr. J. H. Kellogg, of Battle Creek, one of the ablest abdominal surgeons in this country, emphatically dissents from the view that early operative intervention is always best in this disease. An editorial, entitled "Don't Be in a Hurry to Operate in Suspected Appendicitis," appeared in a recent number of his journal, "Modern Medicine," and was presumably written by him. In this article are cited six cases, most of them so desperate that, in the opinion of the writer, an operation would have been almost necessarily fatal. All were saved by non-surgical methods. The treatment included hot enemata to unload the bowels, three times a day or oftener, with the addition to the water of turpentine and sulphate of magnesia in cases of obstinate constipation. Hot fomentations were applied every hour or two for fifteen or twenty minutes, followed by the application of towels wrung out of very cold water, and sometimes an ice-bag was kept on over the seat of pain between times. No medicines were given by the mouth.

It is noteworthy that in most of the fortunate experiences above summarized there was early and frequent, as well as thorough, emptying of the bowels; also that vigorous use was made of the unquestionably valuable sedative and resolving action of hot and moist local applications, and that in all the larger series of cases a mercurial in some form was used.

A great deal more will be known about therapeutics twenty years hence, and it is safe to say that there will be a much larger use in a safe way of antiphlogistic and eliminative measures than is fashionable now. Various theories and facts, such as the usual self-limitation of disease, bacterial influence, and the recent disastrous abuse of the coal tar antipyretics and of the newer hypnotics, have combined to discourage anything like an energetic use of many well-approved remedies, and in some of the medical centers there has been a drifting of late in the treatment of certain acute diseases toward expectancy. Naturally, this timid tendency of Medicine has afforded

an opportunity for Surgery, which was never more virile or self-confident than at present, to push forward aggressively toward the exclusive occupation of some still debatable ground, such as the treatment of appendicitis.

Such experiences as those of Carpenter, Hutton and Kellogg should encourage physicians who have been on the point of acquiescing in the new doctrine that every case of appendicitis is one for the surgeon from the very start, to attack the disease more energetically and hopefully with remedies which have proved so remarkably successful. Especially is this true when treatment can be instituted early; but whenever a case is not seen till it has already progressed to the formation of an abscess, or there are signs that one has formed in spite of the remedies, it is wiser to have a surgeon in attendance, thus dividing the serious responsibility, and affording greater hope of rescuing the patient in the event of a rupture into the abdominal cavity.

A wide distinction should be made between acute and chronic diseases as to their amenability to drug treatment. Chronic invalids are often better off with very little or even no medicine, relying upon hygienic, climatic and mechanical forms of treatment; but in many acute affections there is a golden time in the beginning when boldness in the use of the appropriate remedies may work seemingly magical results.

The Diagnosis of Abnormal Stomachs.

Prof. Turck's recent London lectures, embodying mainly demonstrations of his numerous ingenious instruments for the diagnosis and treatment of gastric diseases, appeared in the *Lancet* of January 28th, and an abstract of them will be found under the head of "Medical and Surgical Progress," in the present number of the INTERNATIONAL. Turck's "gyromele," or revolving sound, as now modified and improved, is a highly useful instrument, and the inventor finds it of very wide applicability. It was originally devised by him as a means of brushing or scraping from the stomach walls shreds of membrane or cell elements for the purpose of microscopic study, and in the hands of specialists it will possibly be employed chiefly in this way, since they have at hand for mapping out the stomach boundaries and stimulating the motor function of the viscus, other methods which for them are equally available, and in some respects more desirable. But it affords probably the simplest and safest means of obtaining specimens of the gastric mucous membrane, and the decision of the question whether an early stage of catarrh of the stomach exists or not, in a given case, must often turn upon a microscopic examination of such specimens. The coming physician, however, will be obliged to do a great deal more stomach work than is now considered necessary, and the gyromele, though it looks formidable, is an instrument which he can very soon learn to use to advantage. For those not very expert in percussion, it may afford the easiest of all the reliable methods of determining the size and position of the stomach. Hundreds of patients throughout the country are having

their stomachs regularly washed out — and often with marked benefit — by physicians who do not possess the special training required to ascertain in the usual way the boundaries of that organ, or to determine by a chemical examination of the character of the gastric secretion. In the case of these patients who have become accustomed to a tube, the gyromele could be introduced with scarcely any difficulty, and then, with an assistant to turn the crank, the position of the greater curvature could at once be determined by simply feeling through the abdominal wall the wobbling of the sponge-tipped distal end of the flexible cable. With a little more practice the position of the lesser curvature could be made out in the same way, and with a greater certainty, perhaps, than by any other method.

The INTERNATIONAL is essaying to teach the profession generally so much of the specialties as it is practicable and desirable to teach through printed discourses, and it must be insisted that at this end of the nineteenth century no person obscurely out of health (especially if there are present symptoms of disturbed digestion) should be subjected to a course of active medication until it shall have first been decided whether or not there exists a displacement or dilatation of the stomach. Either of these morbid conditions can now be readily diagnosticated, even without intra-gastric instruments in most cases. Both are apt to prove so harmful to the general health and so persistent when unrecognized or wrongly treated, and both are usually so manageable nowadays, sometimes with, and more often without, surgical intervention, that there is no excuse for overlooking or ignoring them, as is so constantly done.

The Prophylactic Power of Antitoxin.

In a recent issue of *Treatment*, a striking instance is related of the power of antitoxin to prevent the development of diphtheria after exposure to the infection. In an institution containing sixty children, one contracted diphtheria from an exposure while out for the day visiting a friend, early in February, 1898. The disease spread to the girls occupying the adjacent beds on either side of her. These three were all removed to a hospital, and no more cases developed till after their return in March. Numerous new cases then occurred, and the throats of the three convalescents were found to present diphtheria bacilli. By April 29th the disease had spread to a number of other children in the same dormitory. Then a protective dose of antitoxin was given to every child in the institution, and not a single new case developed thereafter.

The evidence would now seem to be sufficient to establish beyond question that antitoxin has a decided efficacy in preventing diphtheria, as well as in lessening the virulency and duration of the disease when the treatment is instituted early. It is noteworthy that, according to most of the observations, the earlier the administration of antitoxin is begun, the better are the results.

Under the head of "Therapeutics," on another page, will be found the abstract of a paper recently translated by our assistant, Dr. Robin, from the Russian journal *Vratch,* describing a new and apparently highly-promising method of treating tuberculosis by hypodermic injections of cinnamate of sodium. The results obtained in a series of eight cases, in none of which could any change of climate, occupation, or mode of living, be made, were extraordinarily favorable. All the patients improved markedly except one, whose case was desperate, probably one of galloping consumption. The translation is from a preliminary report only, and the author is still investigating the subject.

A New and Promising Remedy for Tuberculosis.

A far more extensive study of the effects of preparations of cinnamic acid in tuberculosis has been made by Landerer, whose experience with the remedy has been embodied in a volume of over three hundred pages. In the *Press Medicalé* of January 7th this volume is fully discussed and the results of the author summarized. The latter gives the preference to sodium cinnamate or cinnamylate. It is dissolved in the physiologic salt solution and injected into a vein every forty-eight hours. Landerer begins with half a milligram of the sodium cinnamate and adds a milligram each time till a maximum dose of 25 milligrams has been reached. This is continued for four to six months, and then, after a rest of a month or more, resumed with the same dosage as at first.

Landerer claims that under this treatment all cases in the early stages get well. In a total of 119 cases, all those without fever responded favorably, being rapidly cured. Some of the cases having cavities are said to have recovered, and even the very advanced ones were greatly improved in general health as well as locally. Hectic fever and acute phthisis were not helped.

EDITORIAL MENTION.

THE Hunterian Oration at the Royal College of Surgeons of England will be delivered this year by Sir William MacCormac. The Prince of Wales has consented to be present on the occasion and dine with the college the same evening. It will be remembered that Sir William MacCormac was the consulting surgeon when the Prince was suffering, last summer, from a fracture of the patella.

A RECENT number of the New York *Medical Record* contained a communication by Dr. Einhorn on "Membranous Enteritis and Its Treatment." It was read before the German Medical Society of New York earlier in the winter and enjoyed the distinction of being quite fully discussed by an

unusually large number of able physicians, including Jacobi, Leonard Weber, Meltzer, Heitzman, Fraenkel and others. It is remarkable, also, that all these distinguished speakers agreed with the author of the paper in his explanation of the coincidence of marked nervous symptoms with the local phenomena of constipation, colicky attacks, and the passage of mucus moulded often into casts of the bowel. It was the unanimous opinion that a neurotic condition was the cause and the intestinal disease the effect. No one seems to have even suggested the possibility of a contrary relation, or that a disease of the bowel involving constipation, and the excretion of large amounts of mucus with many cylindrical cells, might cause sufficient auto-intoxication to result in nervous symptoms.

Hollopeter, in a clinical lecture reported lately in the *Medical Bulletin*, called attention emphatically to the fact that whooping-cough has not received the recognition that the gravity of the disorder requires. Though often neglected by parents and not quarantined by health boards, it is really a very dangerous disease in its later stages. Hollopeter believes we should have as stringent laws for the isolation and management of whooping-cough as we have for diphtheria or scarlet fever. He advises local antiseptic treatment, especially in the beginning, saying: "If we catch a case of whooping-cough in the catarrhal stage, then our treatment must be purely local, and, as long as we can attack the disease in its local habitation, we may hope to cut it short. I have in my mind several cases that were exposed to the contagion, had the catarrhal condition, had all the symptoms I have spoken of, and within ten days all of them vanished by the use of the hydrogen dioxid; in other words, recognizing the fact that these children had been exposed to contagion and had presented the usual symptoms of the earlier stage of the disease, I at once sterilized their naso-pharynx." Dobell's Solution and other antiseptics were also advised for local use. The lecturer recommended antipyrin and various other antispasmodic remedies internally, though he did not mention the infusion of chestnut leaves, which is one of the best of them.

A New Gastroscope. Professor Ewald exhibited, at the last annual meeting of the British Medical Association, a new form of a gastroscope devised by his assistant, Dr. Kuttner. It is composed of a series of segments forming an easily movable tube, which can be bent to correspond with the œsophageal curve and passed into the stomach. Then it is straightened by turning a screw at its outer end. The other end of the tube contains an electric lamp and a prism, by means of which a picture of the stomach wall is reflected through a system of lenses at the outer end of the instrument. The picture is much magnified and rendered visible in the same manner as in a telescope.

BOOK-REVIEWS.

THE SEXUAL INSTINCT: ITS USES AND DANGERS AS AFFECTING HEREDITY AND MORALS. By James Foster Scott, B.A., M.D., C. M. New York, E. B. Treat & Co., 241-243 West Twenty-third Street. Price, $2.

The author proclaims at the outset that his work was "intended primarily for laymen—not for women or boys." There is a certain amount of prejudice in our profession against books designed to instruct the laity concerning medical subjects, but this has always seemed to us wholly unjustifiable. It is certainly for the good of mankind that the knowledge of diseases—especially those which are infectious and avoidable—should be as widely disseminated as possible. And who should or could teach these things if not physicians? We should be almost disposed to criticise Dr. Scott for restricting the beneficiaries of his valuable instruction to men. The perils of promiscuous sexual indulgence, as well as the certain impairment of health, mental, moral and physical, which results from the practice of masturbation, need to be made familiar to boys as well as men, since it is often in early boyhood that the first false steps are taken. And women from the very age of puberty need to receive delicately-worded warnings on the same subjects. Both men and women will read books devoted to the discussion of sexual matters, and the majority of such books more or less covertly pander to depraved tastes. The book before us is pure and elevating in tone. Every parent would be the better for having read it, and no boy should be permitted to grow up without learning the vitally important lessons which it inculcates. While it is sufficiently popular in style to be intelligible and interesting to all, the large amount of medical knowledge conveyed is thoroughly scientific and up to date. Indeed, there are very few physicians in general practice who could not learn from it much of practical value to them in the diagnosis of gynecologic and venereal diseases. The book covers 436 pages, and is well printed as well as neatly and substantially bound.

A PRACTICAL HAND-BOOK ON THE MUSCULAR ANOMALIES OF THE EYE. By Howard F. Hansell, A.M., M.D., and Wendell Reber, M.D. Philadelphia, P. Blakiston's Son & Co. 1899. Price, $1.50.

According to their preface, the authors have attempted discussion of this subject in language easily understood, and they have sought to avoid theoretic speculation, to emphasize methods that have stood the test of their own experience, and, without making a book of reference, to omit no important data that they consider trustworthy. A reading of this book shows that they have fully accomplished their object. From cover to cover the volume is full of sound reason and shows keen judicial mind and especial affinity for practicality. Although there are some minor points of difference from our own views, we pronounce the book a safe guide to follow in the treatment of oculo-motor anomalies. This is in marked contrast to some of the recent contributions in this field, the authors of which, in their enthusiastic advocacy of muscular imbalance as a cause of major neuroses, and of tenotomy as a cure-all, have brought distrust upon ultra-specialism in ophthalmology. Recent enthusiasts have uselessly refined the subject to the isolated study of individual muscles, that never have individual function. We are glad to say that the present au-

thors have broader views, and have studied the powers of adduction, abduction, supraduction and infraduction, rather than the separate muscles participating in these movements. We also bespeak for their plea for a rational nomenclature the attention of all ophthalmologic writers. We would prefer to see more prominent mention of astigmatism (irrespective of spherical defect) in the production of heterophoria. We believe that exophoria is more often present in myopia than in hyperopia, but we do not believe that myopia is the chief cause of exophoria (p. 101); and we have not found that orthophoria and esophoria are so very rare in myopia. We think that when there is 8° of exophoria for near that 3° prisms bases in before each eye are too strong for constant use (p. 110). We have often found that rhythmical prism-exercise will not only markedly increase the convergent power, but also dissipate the exophoria (p. 109). On page 97 there is a statement that practical muscular equilibrium varies from 2° of esophoria for near to 4° of exophoria for distance. We judge this to be an unintentional mistake. The authors have wisely noted the difference in record of the Maddox-rod test and the Stevens phorometer.

These few minor exceptions have not been uttered in a carping spirit, for the book as a whole is very reliable, and we unhesitatingly recommend it to those of our readers who are interested in this subject, with the hope that they will find, as has been our experience, that muscular imbalance often does not produce any symptoms other than responding to the tests, and that in many cases it never needs any attention other than the ametropic correction.

W. L. P.

Manual of Orthopedic Surgery. A Treatise on Deformities and Diseases of Joints and Bones. By Stewart LeRoy McCurdy, A.M., M.D., Pittsburg, Pa.

Orthopedic surgery is rapidly acquiring the dignity of a specialty. The marked advances of the surgical, and, especially, mechanical, treatment of various deformities, as well as the special training required for their early recognition, make it impossible for the general surgeon to master this branch successfully. This fact has been recognized by a number of medical colleges, in which a special chair for orthopedics has been established. But while the general tendency at present is toward specialization, there is, at the same time, a laudable endeavor on the part of the specialists to make the various specialties accessible to the general practitioner. This the author has accomplished in his excellent manual. "This book," he says, "is intended for the busy practitioner as an aid in diagnosis and treatment, and for the student who finds little time to pursue the larger works." Especially is it indispensable for the general practitioner to become familiar with the early recognition of various deformities, for it is here that an ounce of prevention is worth a pound of cure. "The least suspicion of deformity which might be observed by the parents and mentioned to the family physician must not be lightly or flippantly passed with the remark that 'They will grow out of it.' The rule is that they grow into a coarse deformity, and the family doctor who disregards the solicitude of parents is responsible for the outcome." The author has managed to crowd into this little volume all the information one needs to acquire without going into theories and scientific speculations. Everything of importance in the diagnosis and treatment is mentioned. Excellent cuts, tables and illustrative cases greatly enhance the value of the book to the physician. It is with pleasure that we recommend this handy volume to both the general practitioner and the student.

A. R.

HISTOLOGY: NORMAL AND MORBID. By Edward K. Dunham, Ph.B., M.D., Professor of General Pathology, Bacteriology, and Hygiene in the University and Bellevue Hospital Medical College, New York. Illustrated with 363 engravings. 493 pages and index. New York and Philadelphia, Lea Brothers & Co. 1898.

The book consists of an introduction and twenty-six chapters. Chapter I. deals with cells, and is satisfactory. Chapter II. considers the elementary tissues, is brief, possibly too much so. Chapter III. treats of epithelium, and includes endothelium, which, the author admits, should be classified with connective tissues. Chapter IV. deals with the connective tissues. It is quite satisfactory and fairly well illustrated; fig. 49 and fig. 50 constitute striking exceptions. Chapter V., dealing with muscular tissue, and Chapter VI., dealing with nervous tissue, are brief, but well illustrated, and, one may say, satisfactory. Chapter VII. is headed Organs, and occupies a little more than one page. Exactly why it is introduced is not apparent. Chapter VIII., on the circulatory system, and Chapter IX., on the blood and lymph, are fairly satisfactory. Chapters X., on the digestive organs, XI. the liver, XII. urinary organs, XIII. respiratory organs, may be passed over without criticism. Chapter XIV., on the spleen, is not up to the standard of the other chapters. Chapter XV., on the skin; Chapter XVI., on the ductless glands; Chapter XVII., on the reproductive organs, are fully acceptable. Chapters XVIII. and XIX., dealing with the nervous system, are fully up-to-date, but we think that separating the chapter dealing with nervous tissues by considerable over 100 pages from the chapter on the central nervous system, is not for the best.

The second part of the book, dealing with the histology of the morbid processes, is brief and fairly well illustrated. The chapter on histologic technic is acceptable, but very few laboratory workers will care to go to the German Pharmacopeia for formulæ. It is very much better to follow such writers as Arthur Bolles Lee, who gives workers formulæ by which one can make up stains and preparations, no matter in what country he may be working.

We are inclined to compliment the author upon his book and to say that we believe he is entirely in the right line. Every practical teacher knows that the student grasps Normal Histology best after a course in Morbid Histology, and that in medical schools the association of the two is of the greatest aid. For this reason we hope to see Prof. Dunham elaborate his book, a thing which every chapter shows his competency to fully accomplish. When we took up the book we hoped to find morbid conditions in organs considered with the normal organs, and we are still inclined to believe that this course would be advantageous.

DISEASES OF THE EYE. By G. E. de Schweinitz, A.M., M.D. With 255 illustrations and two chromo-lithographic plates. Third edition, thoroughly revised. Philadelphia, W. B. Saunders, 925 Walnut St. 1899. Price, cloth, $4.00 net; sheep or ½ morocco, $5.00 net.

This popular text-book has been subjected to extensive revision and addition. While primarily intended for students and general practitioners, it has grown to such proportions as to thoroughly epitomize the best ophthalmologic literature for the specialist. In this latest edition particular attention has been given to the important relations which micro-organisms bear to many ocular disorders. The new anesthetics, eucain and holocain, are discussed. Röntgen rays for detecting foreign bodies in the eye-ball are highly recommended, and the method of using them is fully described. Certain chapters, such as Acute and Chronic Retro-bulbar Neuritis and Diseases of the Sinuses, in which the author is especially proficient, have been rewritten largely. A number of new illustrations have been added. W. L. P.

SAUNDERS' POCKET MEDICAL FORMULARY. By Wm. M. Powell, M.D. Fifth Edition, thoroughly revised. Philadelphia, W. B. Saunders. 1899. Price, $1.75 net.

Saunders' "Formulary" deserves its place in the estimation of those physicians who make use of such handy little reference books. Besides a large number of better ready-made formulas than usually find their way into print, it contains a full dose list, a table of incompatibles, the metric system of weights and measures, the strength of many useful gargles, doses of drugs for atomization, etc.; the pulse at various ages, the periods of incubation, and other useful facts about the eruptive fevers, the treatment of asphyxia by drowning, a very full and suggestive "Surgical Remembrancer"; a list of poisons and their antidotes, and the diameters of the female pelvis and fetal head, contributed by Dr. Richard C. Norris. There is, besides, a diet table for various diseases, and the book ends finally with a very full list of the drugs and materials used in antiseptic surgery. Indeed, to the uninitiated it might well seem as though, with the practice of medicine, surgery and obstetrics thus skillfully condensed into such a convenient form, prolonged study and experience were scarcely necessary to equip the physician for his work. Nevertheless they are.

A TEXT-BOOK OF OBSTETRICS. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania. With 653 Illustrations. Philadelphia, W. B. Saunders. 1898.

Medical books are multiplying at such a rapid rate that it is proper to scrutinize each new candidate for favor, and ascertain if it have any good *raison d'etre.* And yet an ultra-critical spirit in this respect is not desirable. When the author is at once a conscientious, earnest and trained observer and besides has had a large experience, it is scarcely possible for him to write a book which shall not contribute much of value to the sum total of our knowledge. The author and publisher have all to risk, the reading public nothing. For if the book does not prove useful, it need not be purchased and read. Obstetrics, upon a superficial view, would seem to be one of the most rigidly limited and least progressive of the special departments of science. All babies must travel the same crooked road when they come into the world, unless they take the short cut by way of the Cesarean section, and there are few new developments of value in the mechanism of labor; yet, looking back over a period of twenty-five or thirty years, some highly important advances have been made even in midwifery. Asepsis has proved as great a boon to the lying-in woman as to surgical patients. Puerperal fever has been robbed of most of its terrors, and our knowledge of extra-uterine pregnancy has been advanced remarkably by the brilliant achievements of gynecology.

All the newer developments in midwifery have been faithfully mirrored in this new book of Prof. Hirst. It is in every respect a very satisfactory work. It shows a thorough and intimate knowledge of the subject, and such a broad, comprehensive grasp of it as has enabled the author to present its important features in the way best adapted to the wants both of students and practitioners. Especially praiseworthy are the chapters on "The Diseases of the Fetus" and "The Physiology of Pregnancy." Both abound in new and very excellent illustrations, which are exceedingly helpful. The signs of pregnancy are nowhere more lucidly or graphically described. They are much more fully and accurately, as well as more artistically, illustrated than is usual in works on obstetrics. Nearly sixty pages are devoted to the subject of "Puerperal Sepsis" and this is

perhaps the most valuable chapter in the book, describing fully both by letter press and beautiful illustrations all the latest discoveries in the pathology and bacteriology of the structures involved, as well as the most recent and approved methods of treatment.

An almost unique feature of the work is embraced in Part VII., with which it closes. This is devoted to "The New-Born Infant," being divided into two chapters, the first of which describes the "Physiology of the New-Born Infant," and the second the "Pathology of the New-Born Infant," considered separately under the heads of the injuries and diseases of the same. The only possible peg which this admirable book seems to offer upon which to hang a criticism is the plan according to which the contents are arranged. It is a little confusing at first to find the subjects of labor and the puerperal state treated in two widely separated portions of the volume. Part II., under the general head of "The Physiology of Labor and The Puerperium," discusses first Labor and then The Puerperal State. Part III. contains an elaborate account of the Mechanism of Labor; Part IV., The Pathology of Labor, including Dystocia especially; and then in Part V. again is found a full account of the Pathology of the Puerperium. It would seem more natural to follow the usual plan of classifying these topics.

Manual of Clinical Chemistry. By Elias H. Bartley, B.S., M.D., Ph.G., Professor of Chemistry and Toxicology in the Long Island College Hospital, Dean and Professor of Organic Chemistry in the Brooklyn College of Pharmacy. Philadelphia, P. Blakiston's Son & Co. 1899.

This little book really fills a want. The author has compressed into 146 pages of rather finely printed matter more practical chemical instruction of value to the physician than any one ever has before. With such a reliable, intelligible, handy and inexpensive little volume ($1) within his reach, there will be no excuse hereafter for any physician who fails to make at least the simpler tests of both the urine and stomach contents in all important cases. There are some minor details in which the book is open to criticism, the most noteworthy being the directions for taking up a test meal. Only the method of compression is described, and this inflicts upon patients an unnecessary amount of discomfort, which is wholly avoided by attaching to the end of the tube an exhaust bulb, in the shape of an enlarged Politzer rubber air bag.

The Medical News Pocket Formulary for 1899. By E. Quin Thornton, M.D., Demonstrator of Therapeutics, Pharmacy and Materia Medica in the Jefferson Medical College, Philadelphia. Published by Lea Brothers & Co.

This little book presents some new and very desirable features. It is much smaller in bulk than other formularies of its kind, thus offering a considerable advantage to the one whose pockets are not very spacious. Each prescription is accompanied by "indications" and other useful therapeutic hints. The front pages are devoted to tables of weights and measures, comparative scales, important compatibles, poisons and antidotes and doses. The number of prescriptions is quite complete, covering nearly all the diseases human flesh is heir to. The omission of the authors' names, which are usually attached to each prescription, is, however, a questionable policy. The publishers have not only made the book attractive, but have also reduced the price considerably.

MEDICAL NEWS AND MISCELLANY.

At the annual meeting of the Atlantic City (N. J.) Academy of Medicine, on Jan. 13, 1899, the following officers were elected: President, Dr. W. Blair Stewart; Vice-President, Dr. Wm. Edgar Darnall; Secretary, Dr. E. C. Chew; Corresponding Secretary, Dr. J. B. Thompson; Treasurer, Dr. Walter Reynolds.

Enlarged Prostate in the Old. In a personal examination of the prostates of 360 men over 55 years of age, the large majority being between 65 and 75 years, Dr. Johnson found 186 to have very perceptible enlargement of the prostate. In 65 there was urinary disturbance. In 56 the prostate was so large that it could not be outlined by digital examination per rectum. Of these 56, 14 had urinary disturbance constantly, such as dysuria, frequent micturition day and night, rectal and vesical tenesmus, retention at times, with residual urine and cystitis. In 210 the prostate was very perceptibly enlarged; 43 had urinary disturbance of a milder degree than those above mentioned. The right lobe was markedly more enlarged than the left in 7. Of the 7, 5 had urinary disturbance. The left lobe was also enlarged in 7, but had urinary disturbance. The middle lobe was slightly enlarged in 5. None complained of vesical distress. The prostate was found to be normal in 44. It was atrophied in 30. Of these 30, 2 had slight enuresis.

Vicarious Urination from the Leg. Dr. A. T. Rice reported, before the Ontario Medical Association, an almost unique case of a woman who was suffering from repeated attacks of cystitis accompanied by complete atony of the bladder. During the last attack the secretion of the bladder gradually diminished, but was compensated for by a transudation of fluid from the anterior portions of the lower limb, between the knee and ankle. This fluid was voided regularly three times a day, the average being 30 to 40 ounces daily. The fluid simply oozed from the skin without any abrasion being present. The patient would realize that the fluid was about to issue, and would place her feet upon a stool, with a vessel beneath the heels. The fluid was of an amber color, sp. gr. 1,010, had a strong smell of urine upon being boiled, with a distint ammoniacal smell after standing, and showed the presence of uric acid. As the attack subsided, this transudation suddenly ceased, and the urine began to pass through the urethra.

Examination of Tuberculous Sputum in Children. The well-known difficulty in securing sputum from children for microscopic examination is overcome by Meunier by washing out the stomach of children suffering from suspected pulmonary tuberculosis, who, as a rule, swallow the expectoration. The washing is done in the morning, and, in the case of children, is accomplished with ease. The contents are then examined for tubercle bacilli in the usual manner.

An Improved Method for Finding Peptones in Albuminous Urine. E. Freund uses the following method: To urine which contains less than 0.1% albumin he adds 2 drops of a 10% lead acetate solution to each 10 c.c. of urine. This precipitates albumin, nucleo-albumin and protalbumin. The urine is then filtered and the filtrate tested by the Biuret method. Should the urine contain a larger amount of albumin (up to 3%), it is boiled, after adding 1 drop of a 20% solution of acetic acid, then neutralized with a few drops of a 20% solution of soda, and 2 to 3 drops of a 10% solution of lead acetate added. The filtrate is then free from albumin.

Overeating by Idle People. Dr. W. Ewart, of London, in the second of his Harveian Lectures on "Disease: Its Treatment and the Profession of Medicine in 1899," spoke as follows in the course of his remarks under the sub-head of "Physiological Rest to the Organs": "Partial physiological rest is much more easily applied in medical treatment, and we spend our lives preaching the lesson of moderation, but specially in the direction of the nervous and of the alimentary system. It is, perhaps, a redeeming feature of illness in general, but more particularly of enteric fever, when it strikes down the middle-aged man, that it affords his overworked nervous system a prolonged and timely rest. If the renovation of tissues which is one of the results of a consuming fever were an unqualified advantage, then the Lenten fast and the more extraordinary fasts of certain professionals might claim some foundation in science. More probably, however, the favorable result which is often observed in the convalescent from typhoid fever is the effect of the prolonged rest of many functions, including those of the stomach and of the liver, but more especially of the nervous system. When convalescence is happily conducted, the sufferer may find himself a new man, disencumbered and refreshed, with a more active stream of nutrition which reminds him of younger days. But we need no lesson from illness. Our treatment of the nervous system by rest is sufficiently confirmed by its results. Again, in connection with the alimentary system, the advantages of partial rest are evident, as in that wholesome cure for the prevalent results of abuse of food as a mere stimulant — an exclusive milk diet combined with rest in bed. Who has not been struck with the singular contrast between the frugal diet, often small in bulk, of hard-working laborers, and the weight and superfluous richness of that of the unemployed? With the latter the labor is visceral and the penalty as well, and their life is mainly shortened by this organic overwork of stomach, liver and kidney. In vain has modern fashion endeavored to lengthen the interval between meals by deferring the mid-day feast and throwing back the late dinner nearly to the hour which summoned our forefathers to bed. An additional afternoon meal has crept in between them, and the early cup of tea before rising also belongs nowadays to elementary hospitality. The least the stomach can claim is that its digestions should not overlap. Unfortunately, even its single opportunity, the long rest of the night, is too often encroached upon, and a meal of indigestibles thrown in at 12 or 1. Half this amount of food would keep a man in strong work; the idle, even if they be strong, must break down under its weight. Alone the dyspeptic is safe whose constitutional weakness acts as a merciful protection. Physiological rest in this direction is much needed."